

# WESTERN INDUSTRY



Quality separator at work in Walla Walla, Wash., frozen foods plant. Sweet and tender peas remaining at top of brine solution are frozen.

Forty-five Cents

VOLUME XI

NUMBER 11

November, 1946

# security...



a cold, smothering blanket  
of carbon dioxide and the  
fire is out before it is out  
of control.

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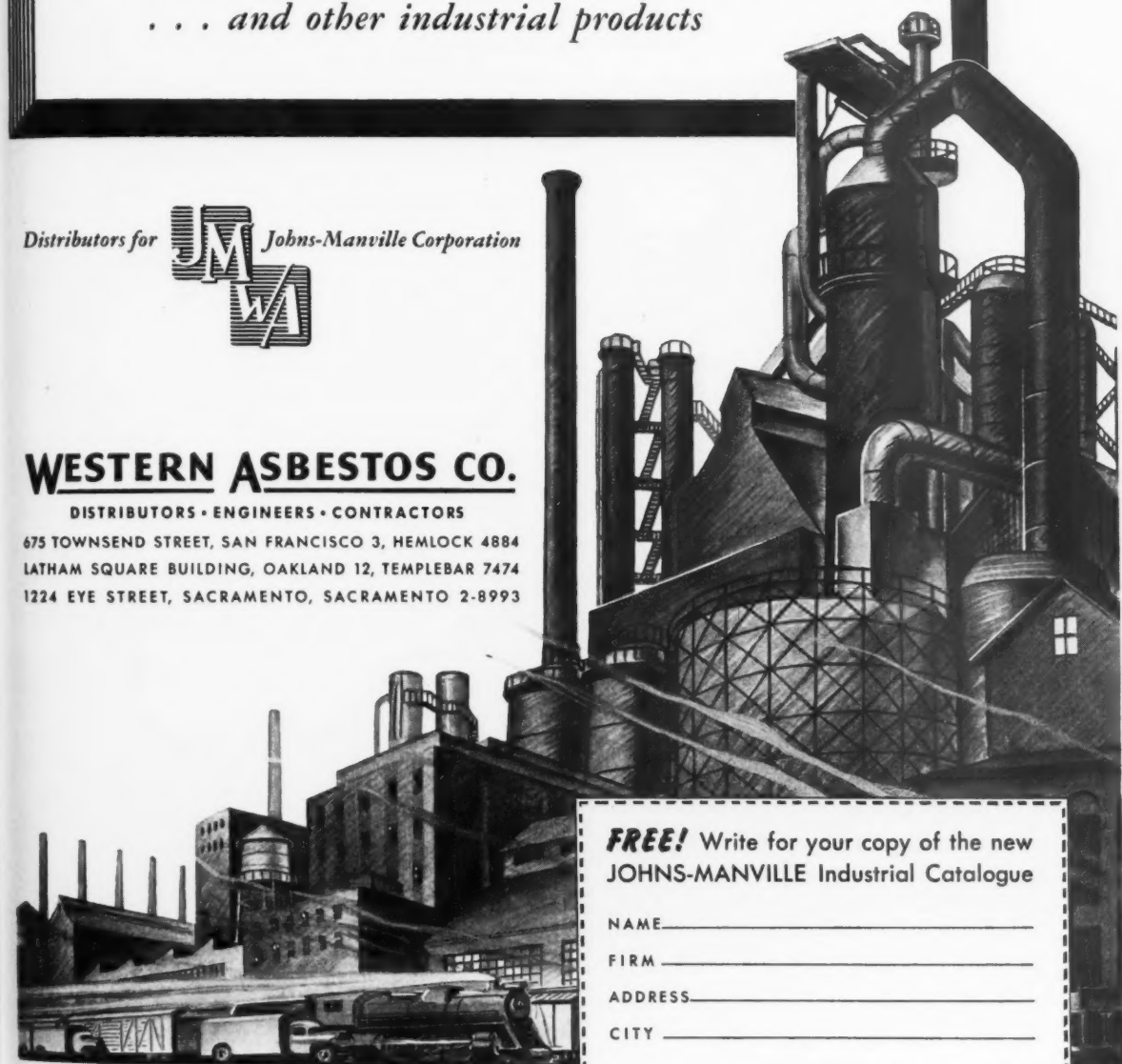
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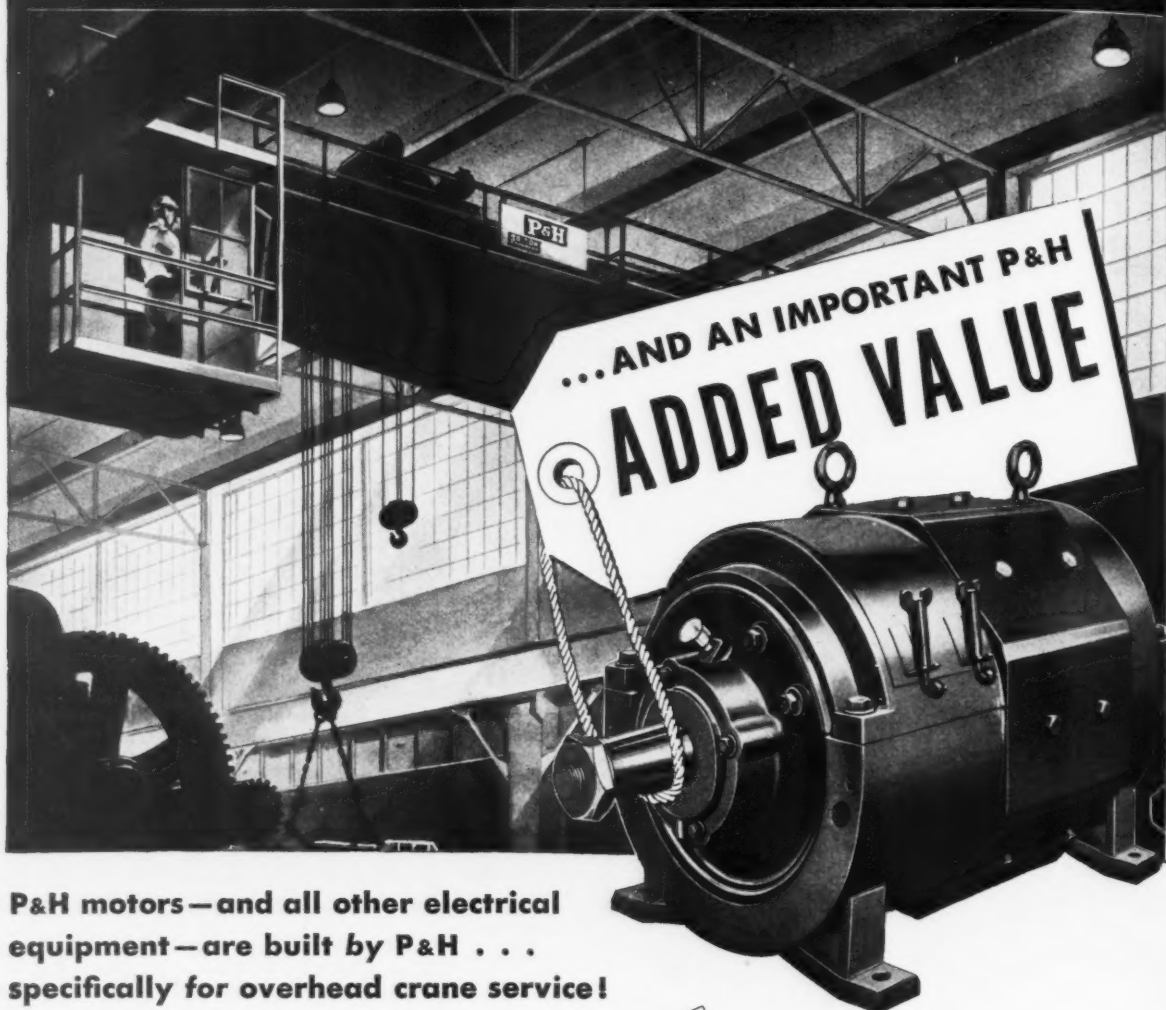
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**P&H motors—and all other electrical equipment—are built by P&H . . . specifically for overhead crane service!**

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# This Month in WESTERN INDUSTRY

VOLUME XI

NOVEMBER, 1946

NO. 11

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35c per Month \$4.00 per Year

## Published monthly by

### KING PUBLICATIONS

503 Market Street  
San Francisco 5, California  
Phone YUKON 1537

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Please address all communications  
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## Member

Controlled Circulation Audit, Inc.  
National Business Papers Assn.

Entered as second class matter Dec. 6,  
1945 at post office at San Francisco 1,  
Calif., under the Act of Mar. 3, 1879.

© 1946 by King Publications

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## Front Cover

The quality separator in use at the new frozen foods plant of Birds-Eye Snider, Inc., Walla Walla, Wash., can tell in a twinkling which peas are over-ripe. The sugar content changes to starch, making them heavier. They sink to the bottom. Tender peas float in a brine solution.

**NOW...** *Immediate Delivery!*

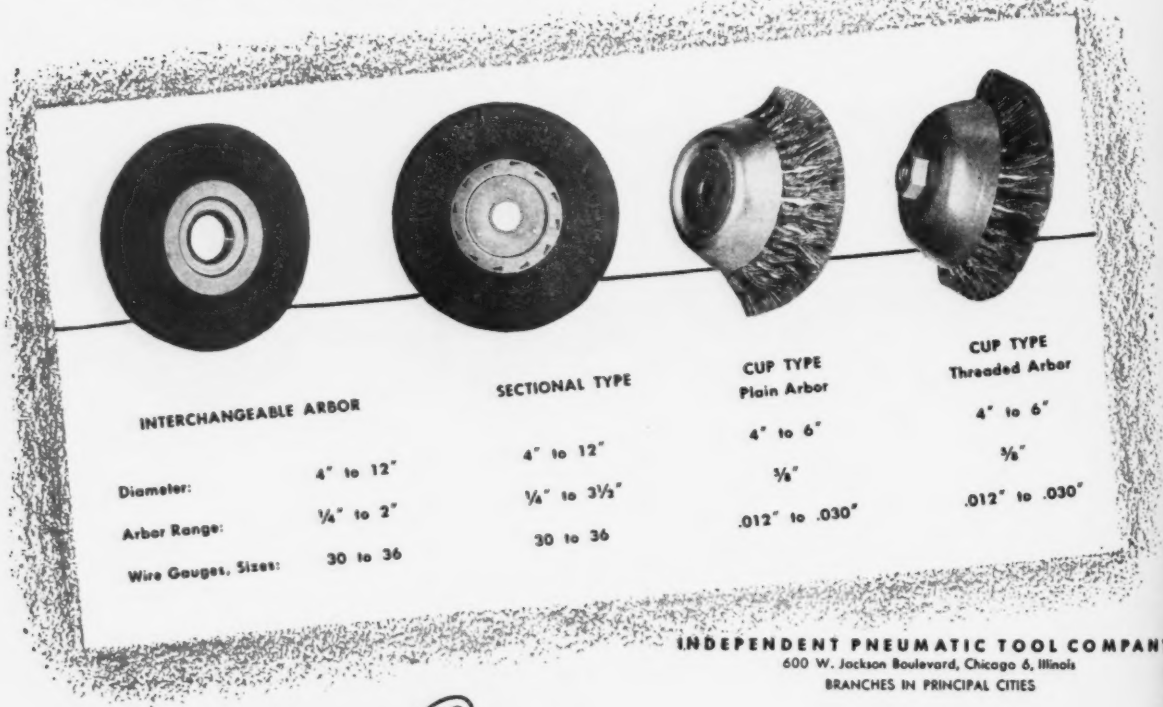
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**WIRE WHEEL  
BRUSHES**

*from Distributors Stocks...*

Now you can get immediate delivery of sturdy, long-life Thor wire-wheel brushes in most popular styles and sizes from your nearby Thor Distributor's stock. Available in a range of sizes from 4" to 12" diameter in single-unit, arbor-hole adaptor or metal-center sectional type. Brush sections are heavily filled with Double-Durable special crimp wire in gauges of 30 to 36. Constructed to resist crystallization and breakage, these modern brushes will operate efficiently on portable and stationary equipment with spindle speeds up to 6000 R.P.M.

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Wire Gauge, Sizes:	30 to 36	30 to 36	.012" to .030"	.012" to .030"

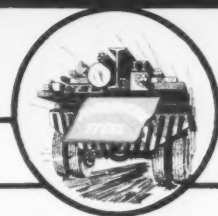
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**TOOLS**

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# EARLE M. JORGENSEN CO.

## COLOR CHART



### CARBON AND ALLOY STEEL BARS & BILLETS

When small diameter bars are supplied in an analysis identified by two colors, such as A-4142, one end is painted one color and opposite end other color.

### PLATES AND SHEETS

	MILD STEEL		A-2335/40 ANNEALED BARS and UNANN. BILLETS		SPEED TREAT		SPEED CASE
	C-1019 H.R. FORGING QUALITY BARS and BILLETS, also C.F. and T. & P. BARS		A-3141 ANNEALED BARS and UNANN. BILLETS		FIREBOX		BOILER FLANGE
	PLOW STEEL (Hot Rolled) B-1112 COLD FINISHED BARS		A-4142 ANNEALED BARS and UNANN. BILLETS		MAYARI R		ABRASION RESISTING
	B-1113 C.F. BARS		A-4142 HEAT TREATED BARS		HIGH CARBON (C-1042)		AN-QQ-S-685 (4130) Normalized
	C-1040 H.R. FORGING QUALITY BARS and BILLETS AN-QQ-S-684a (4130) HEAT TREATED & C.F. BARS		A-4620 BARS and BILLETS	TOOL STEEL BARS & BILLETS Squares are shown to illustrate side striping of certain brands.			
	AN-QQ-S-684a (4130) ANNEALED BARS and UNANN. BILLETS		A-4815/20 ANNEALED BARS and UNANN. BILLETS		GRAPH-MO		B.T.R.
	STRESSPROOF BARS (C.F. also Ground) AN-QQ-S-752a (4140) H.R. ANN. BARS and UNANN. BILLETS		A-8717 BARS and BILLETS		XX		OMEGA
	AN-QQ-S-756a (4340) ANNEALED BARS and UNANN. BILLETS		A-8742 HEAT TREATED BARS		X		W.H.C.
	No. 39 MACHINERY STEEL (Hot Rolled Bars) A-4130 POLISH ROD STEEL (Cold Finished Bars)		A-8742 ANNEALED BARS and UNANN. BILLETS		SPECIAL HIGH SPEED		PREMIER ALLOY CHISEL
	C-1019 PRECISION SHAFTING C-1095 H.R. SPRING STEEL		E-52100 SPHEROIDIZED ANNEALED, BEARING QUALITY BARS and BILLETS		445 HOT WORK		LEHIGH S TEMPER
	C-1117 BARS	STAINLESS BARS & BILLETS Type numbers are stamped on Stainless Steel Sheets and Plates.		EXPLANATION This chart shows colors of only the most widely used steels. Refer to our Stock List for identification colors of other steels. Where a certain color identifies more than one type of steel, the finish is specified to enable identification. For example, a bar with ends only Green is Plow Steel if hot rolled and B-1112 if cold finished. If ends are Green and side is striped Green, it is XX Tool Steel. Stainless steels may be distinguished from other steels by their distinctive finish. Therefore, while Green is also used for Type 416 Stainless, it tells which type of Stainless Steel it is rather than to distinguish it from Plow Steel or B-1112.			
	C-1137 BARS		TYPE 303				
	A-2317 BARS and BILLETS		TYPE 416				

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Get your free copy of this steel identification color chart—see next page for details.

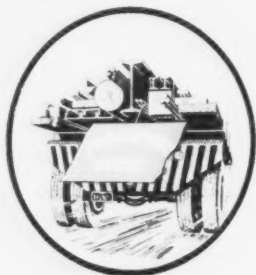


## Jorgensen's new steel identification color chart gives the answer

Jorgensen carries a large and diversified stock of carbon, alloy, stainless and tool steels and identifies each analysis with a color or combination of colors. Users of Jorgensen steels are supplied with a color chart (see other side of this page) to enable them to identify, quickly and positively, any of the various analyses which comprise their particular requirements.

A reproduction of this color chart, mounted on cardboard, may be obtained by writing or telephoning the Jorgensen office nearest you. It is also available in a larger size (14" x 18") and if you would prefer that size, please ask for the wall chart.

Of course, there is no charge for any number of either the small or the wall charts that you can use.



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**STEEL**

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**FASTENERS**



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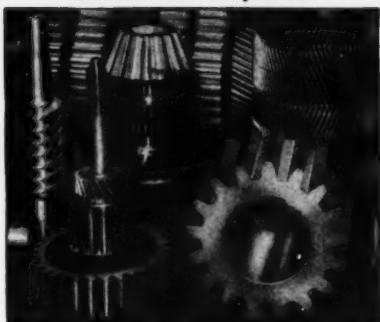
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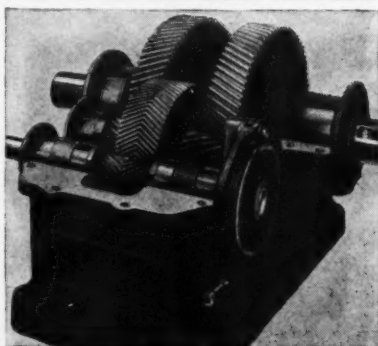


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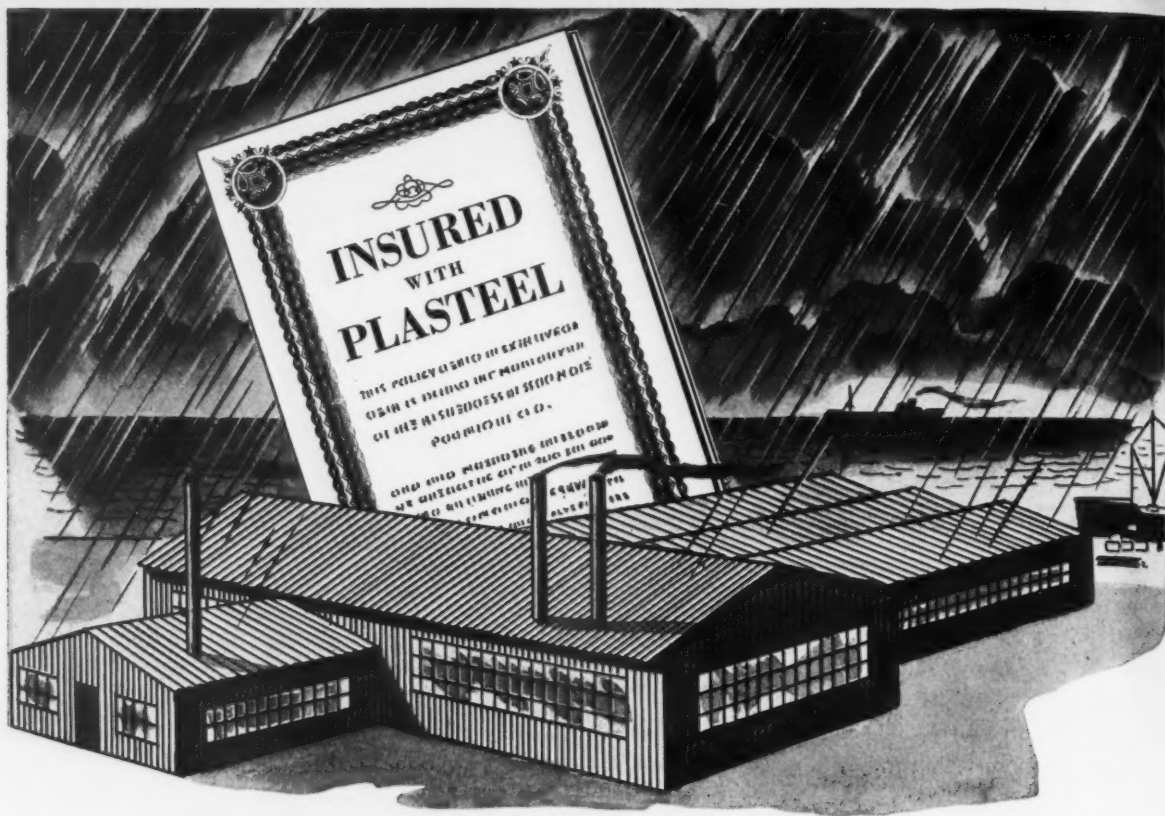
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Ordinary roofs are costly. Their constant need for paint and repairs add to their initial cost. With Plasteel, you can avoid this increased maintenance charge. Because Plasteel is permanent. It resists heat, cold, moisture, acid fumes, mineral dusts, salt spray and other corrosive influences. With Plasteel your first cost is your only cost—every roof an asset—and not a liability. Plasteel is made of high-strength steel sheets that are hermetically sealed against exposure within a weather-tight plastic formula. Then for further protection, a coat of pure mineral mica is added to give Plasteel an attractive surface that needs no paint and no repairs. That's why Plasteel protects permanently and insures roofs against maintenance—against liability.

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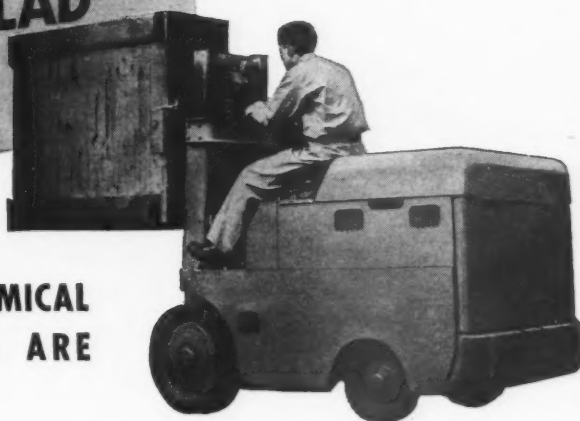
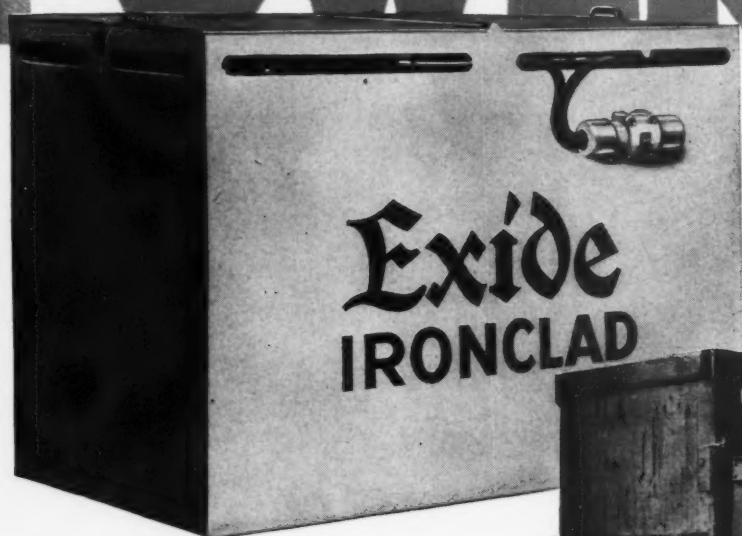



# PLASTEEL PRODUCTS CO.

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POWER WHEN THE BATTERIES ARE  
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More and more, management executives are finding that Electric Industrial Trucks, powered by Exide-Ironclads, are the *right answer* to their materials handling problem. Numerous records prove that this efficient combination assures more tons per man per hour . . . and at lower cost, which means greater profits.

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Inherently dependable  
Built for long, hard service  
Provide maximum safety . . . best  
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Lowest overall cost

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## ... and AID SAFETY



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There is little other industrial machinery that returns as large dividends and raises employees' good will as much for the amount invested as Cleveland Tramrail. It will pay you to learn why thousands of leading companies have installed this modern cost-reducing equipment.



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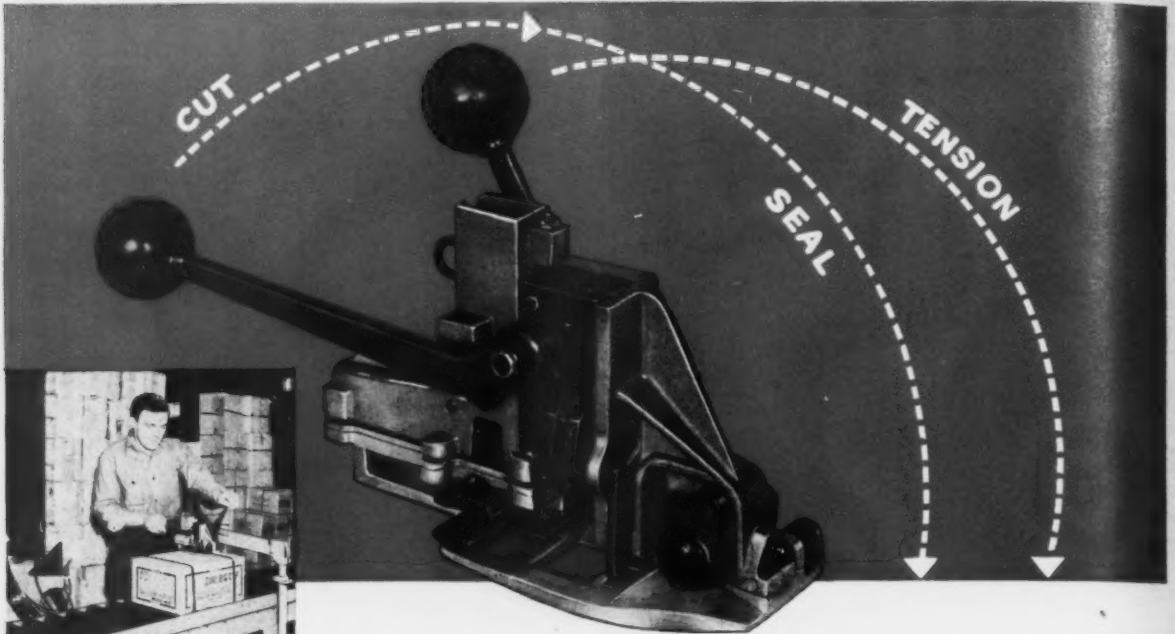
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# CLEVELAND TRAMRAIL

## OVERHEAD MATERIALS HANDLING EQUIPMENT

# The NEW SIGNODE A-2



Packing glass jars moving on conveyor system. A-2 is equipped with tool mount.

## for *FAST STRAPPING*



In this shipping room, machine parts are boxed and strapped with A-2 unmounted.



Here, stove pipe elbows are bundled with an A-2. Note: the tool mount makes this strapping operation an easy one.

**① TENSION ② CUT ③ SEAL**  
*in three easy strokes!*

In every type of production packaging, this new Signode tool sets all-time strapping records. It's unexcelled for fast, low-cost applications—particularly on centralized or conveyor systems.

Alone — the A-2 tensions, cuts and seals in rapid, effortless motions. It handles boxes, cartons, crates, bundles, etc.—in a wide range of sizes and weights.

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STEEL STRAPPING





## THE MOTORS THAT RUN COOLEST IN AMERICA'S HOTTEST DESERTLAND

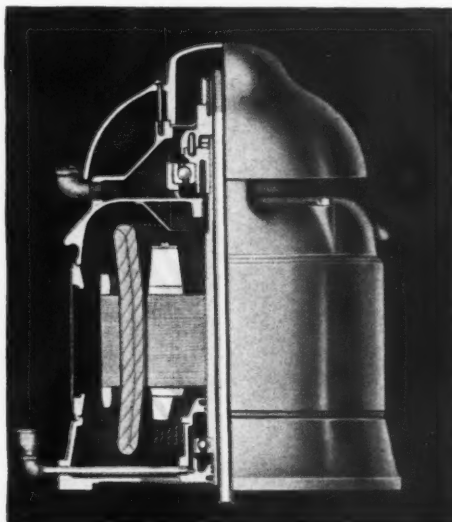
DOWN in the lush Coachella Valley of California, where the finest dates are nurtured, huge quantities of water are pumped from very deep wells. Much of the Valley is below sea level. Torrid temperatures prevail during summer. Pumping water in temperatures of better than  $110^{\circ}\text{F}$ . is a drastic test for electric motors.

It is a significant fact that U. S. Asbestos-Protected Motors predominate in this Valley. These motors were designed many years ago for this particular service.

Ordinary motors couldn't "stand the gaff." They burned out. Pump manufacturers were desperate in their search for a motor that would withstand such service. U. S. Motors engineers were determined to solve the problem. The solution came in the application of Asbestos as the protective element for windings. *Asbestos cannot carbonize.*

The necessity of Asbestos-protection in a motor is made more evident in terms of temperature rise. The reason for a  $40^{\circ}\text{C}$ . standard temperature rise

in motors is to prolong motor life by slowing down carbonization of the insulation. The electrical engineer's thermometer reads in degrees Centigrade.  $40^{\circ}\text{C}$ . rise means  $72^{\circ}\text{F}$ . Where very hot atmospheric conditions prevail—(perhaps as high as  $120^{\circ}\text{F}$ . in field or factory)—and when the motor is subjected to an overload, temperature rise goes beyond the motor's guarantee. *What happens?*



The motor may actually have to operate at, say  $237^{\circ}\text{F}$ . Bear in mind that  $169^{\circ}\text{F}$ . is hot enough to start carbonization. But at  $237^{\circ}\text{F}$ . *carbonization becomes acute!*

These conditions *do* exist and ordinary insulation cannot withstand them. But in U. S. Motors the windings are Asbestos-protected—and *Asbestos cannot carbonize!*

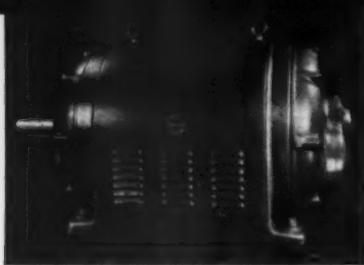
Not only have U. S. Motors solved many obstinate pumping problems in hot regions, but they have brought about revolutionary improvements in deep well pumping. U. S. Motors were the first to be designed as a built-in unit of vertical turbine pumps; the first to add streamline design to pump heads. U. S. Motors pioneered the universally-accepted hollow shaft principle in pump heads. U. S. Motor engineers conceived the AutoStart principle.

**U. S. MOTORS**  
ASBESTOS-PROTECTED

This advertisement was published in Business Week, Modern Industry, Electrical Manufacturing, Machine Design, Product Engineering, Food Industries, Chemical and Metallurgical Engineering and Western Machinery World.



U. S. Horizontal Uniclosed Motor



U. S. Heavy-Duty Uniclosed Motor



U. S. Horizontal Syncrogear Motor

## ALL U. S. MOTORS ARE ASBESTOS-PROTECTED

HEAT originates from two sources in an electric motor stator—(1) from the steel core and (2) from the windings. The windings imbedded in the slots of a stator core are subjected to heat from both elements. A motor burn-out is usually caused by carbonization of the windings. The problem is heat, not voltage. To guard against carbonization, the windings of all U. S. Motors are Asbestos-protected. It's a patented process, pioneered and perfected by U. S. Motor engineers. Instead of using combustible materials such as varnished cloth, paper or oiled linen, we use Asbestos to form the barrier surrounding all stator slots. *Asbestos cannot carbonize.*

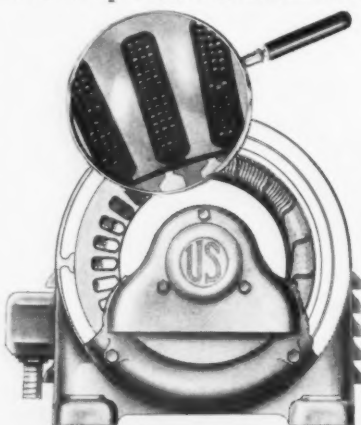
After inserting the barrier wall of asbestos insulation into each stator slot, a few turns of wire are threaded into place. When half the slot is filled, a coil sep-

arator of asbestos plate-board is positioned, to insulate and provide a heat-proof wall between coils in each slot. Then the lips of the asbestos barrier be-

tween the wires and the stator steel are overlapped at the tooth tips.

The entire stator is then immersed in a tank of Asbestosite for impregnation. Asbestosite is a plastic compound which penetrates the windings. Each wire is isolated—sealed with a surrounding area of Asbestosite. During immersion the wires are gently vibrated so that the non-carbonizing Asbestosite will thoroughly work into the windings and equalize their position, one to another. Finally the stator is baked.

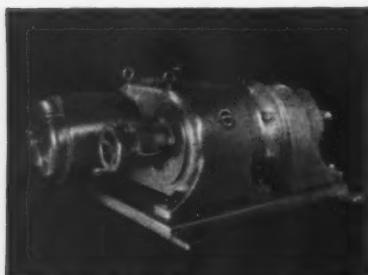
The result is a motor with maximum protection against heat. Any U. S. Motor can operate in torrid temperatures without affecting its power. The windings are forever protected against heat, because *Asbestos cannot carbonize*. Longer motor life is a certainty.



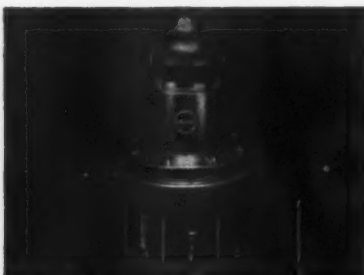
**EACH WIRE IS ISOLATED**

The above drawing delineates the progressive steps in applying Asbestos to U. S. Motor windings.

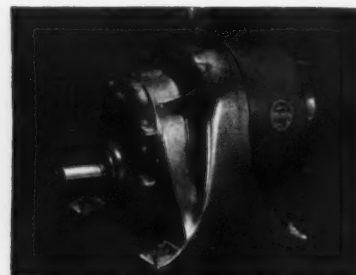
**Descriptive Bulletins upon request.**



U. S. Varidrive-Syncrogear Motor



U. S. Vertical Syncrogear Motor



U. S. Syncrogear, Type GR

### The QUALITY LINE of Power

- VARIDRIVE MOTORS . . . . . for infinite speeds
- SYNCROGEAR MOTORS . . . . . for multiplied power
- UNICLOSED MOTORS . . . . . Horizontal and Vertical
- UNIMOUNT MOTORS . . . . . Horizontal and Vertical
- TOTALLY-ENCLOSED MOTORS . . . . . for hazardous services
- AERO-TEST STANDS . . . . . for aircraft servicing

AUTOSTART Grinders and Buffers

**U. S. ELECTRICAL MOTORS Inc.**

ATLANTIC PLANT: MILFORD, CONN. • PACIFIC PLANT: LOS ANGELES, CALIF.  
Assembly Plant: Chicago. Branches: New York, Boston, Pittsburgh,  
Philadelphia, San Francisco, Seattle. Agents in all principal cities.



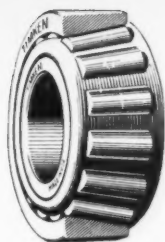
**U.S. MOTORS**

—embody

**ASBESTOS PROTECTION  
NORMALIZED CASTINGS  
LUBRIFLUSH LUBRICATION**

STREAMLINE DESIGN • WEATHERPROOF HOUSING  
SOLID DIE CAST ROTORS • INTRACOOLED VENTILATION  
AUTOSTART ACTION

WE MOUNT IT—  
WE HOUSE IT—  
WE SEAL IT—



# DODGE PUTS TIMKEN BEARING PRECISION INTO *WORKING CLOTHES*

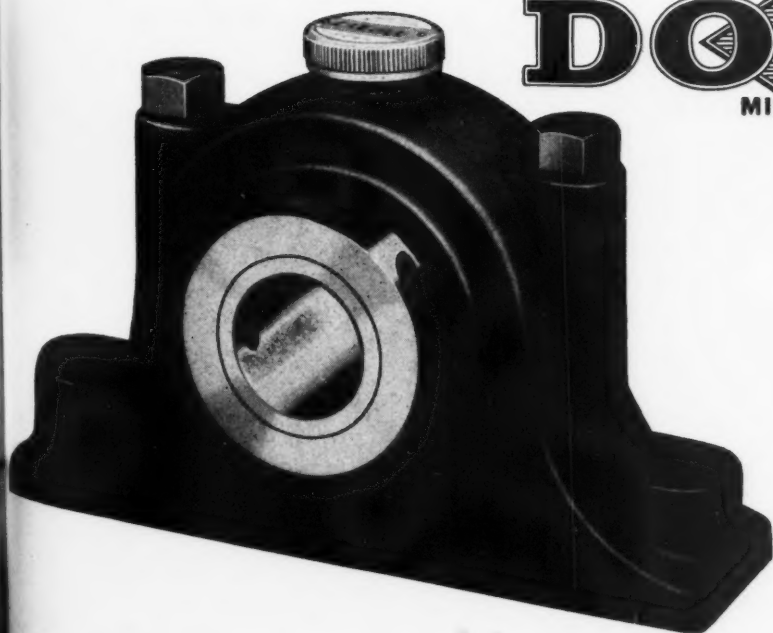


THE DODGE-TIMKEN DOUBLE INTERLOCK PILLOW BLOCK provides a precision bearing assembly, *ready for immediate service*. You simply lock it on the shaft and run at full speed and full load. All the parts required for mounting this bearing are manufactured by Dodge—cast in our foundry and carried through many precision operations on the latest machine tool equipment. Dodge mounts, seals and houses the bearing assembly—with its double row of precision-finished rollers—and delivers it fully assembled, adjusted, lubricated—ready to go to work. The Dodge-Timken Double Interlock is one of the famous Dodge 30,000 hour line, covering a wide range of industrial bearing requirements, and ordinarily is available promptly from distributors' stocks. Look for the Dodge Distributor in your classified telephone directory under "Power Transmission Equipment."

DODGE MANUFACTURING CORPORATION • MISHAWAKA, INDIANA

## DODGE

MISHAWAKA



**THE SYMBOL THAT CAME TO LIFE**  
The man who wears this symbol gives you the correct answers to your problems in mechanical transmission of power. He is the Dodge Transmissioneer.  
Transmission Engineering Means Advanced Design in Power Drives



Copyright, 1946, Dodge Mfg. Corp.

FOR YOUR NAME PLATE REQUIREMENTS, WRITE OUR SUBSIDIARY,  
ETCHING COMPANY OF AMERICA, 1520 MONTANA STREET, CHICAGO 14, ILLINOIS



## She reaches high C—in writing

The soprano, at times, sings sweet. But it takes a lot of writing before you can hear her.

For radio broadcasters build studios, buy transmitters, hire engineers, pay salaries. To chart a *written record* of business facts with speed and economy, they turn, often, to Moore Business Forms.

What's true in radio is true in business of every kind, of every size:

Moore Business Forms help slice operating costs. A Wisconsin insurance firm writes: "Your forms mean a saving of twenty-four man-hours per day."

Moore, out of sixty-five years' experience, constructs forms that allow *more* clerical output with *less* writing. One standard Moore form, for instance, can get permanent facts in writing by as much as 172% faster.

A Moore specialist will be glad to show you paper-work short-cuts that may mean a real saving in time and money.

Telephone your local Moore office, or write headquarters. *Moore stands ready to supply you with everything from a simple sales book to the most intricate multiple-copy form . . . "to put it on the record, swiftly, accurately, economically."*

## MOORE BUSINESS FORMS, INC.

FACTORIES IN NIAGARA FALLS, ELMIRA, N. Y.; MINNEAPOLIS, MINN.; DALLAS, TEX.; LOS ANGELES, EMERYVILLE, CALIF.  
SALES OFFICES IN OVER 200 CITIES FROM COAST TO COAST, ALSO IN PRINCIPAL CITIES ACROSS CANADA

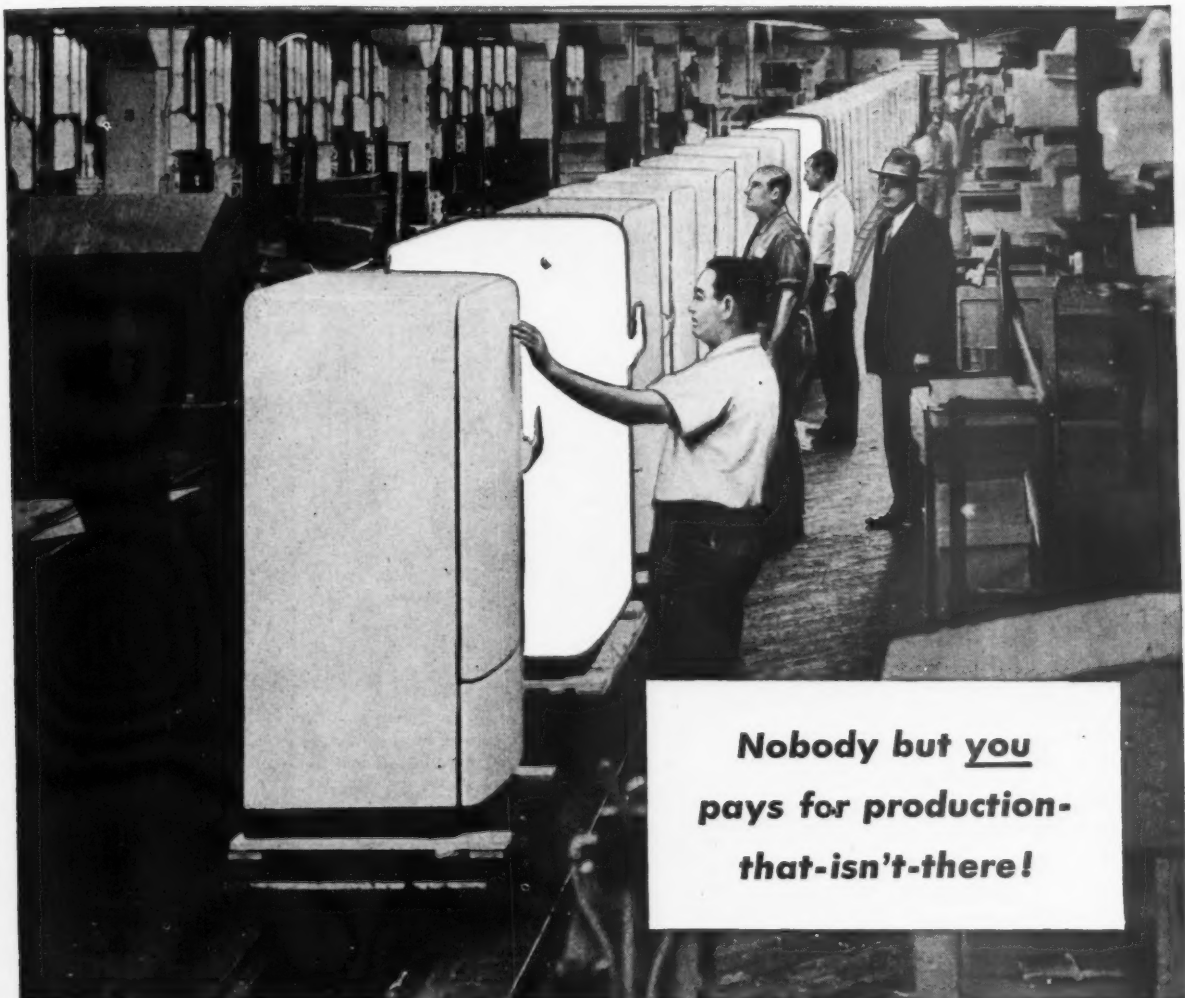
ADV. BY R. W. AYER





# Wire ahead...

## for business ahead



**Nobody but you  
pays for production-  
that-isn't-there!**

UNFORTUNATELY, you can't actually see the production that isn't there. But, if your wiring is obsolete, overtaxed and over extended, you are losing from 25 to 50 per cent in the efficiency of machines and workers.

So it may well be that many a unit you pay overhead and wages for . . . *isn't there!*

To find out whether your wiring is efficient, up-to-date, *adequate*, consult with your plant power engineer, your consulting engineer, electrical contractor or power salesman. A wiring survey now may save costly shut-downs and expensive alterations later.

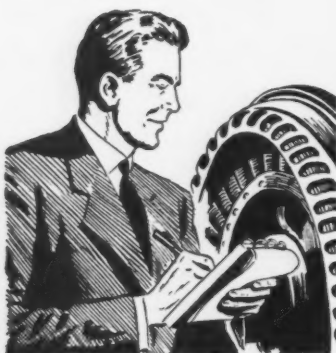


**ANACONDA WIRE & CABLE CO.**

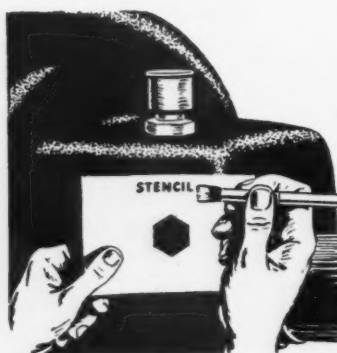
# AN IMPORTANT NEW SERVICE

## The Associated "Color-Guide" Lubrication Plan

A streamlined, over-all service that vastly improves the efficiency of your entire plant lubrication operation. It is a complete four point plan, offered *without charge*—easy to install, simple to maintain. Best of all, it cuts the number of lubricants required to a minimum.



**1. The Plant Survey . . .** A certified Associated Lubrication Engineer comes in, carefully considers service requirements: lubricants; proper, efficient storage; plant machinery, lubrication equipment. He presents you with an integrated, written report on all phases of operation, and provides blueprints where advisable.



**2. Color-Guide System . . .** Provides a color identification for each type of oil or grease used in your plant, following the recommendations of the American Standards Association. This color is then stenciled, in permanent paint, on (1) lubricant container, (2) oil can, grease gun, or dispenser, (3) point of application on machinery.



**3. Lube Record Cards . . .** Oilier or operator follows color and number guides for each unit or machinery group, marks each lubrication or oil change on the card. Thus the card serves as a daily reminder as well as a permanent record—is simple to maintain, requiring only a pencil mark each time, and minimizes chances of error or omission.

## TIDE WATER ASSOCIATED OIL COMPANY

**4. A Continuing Plan . . .** The Associated "Color-Guide Plan" is different from other lubrication systems in that it is only part of a complete, continuing service. It performs the dual purpose of seeing that you get the most out of lubricant purchases, and that all equipment gets the proper lubricant at the proper time. On his regular calls, the Associated Representative will check to see that the Plan is functioning, and that it is expanded to include new installations whenever they are made.

**Correct Lubrication is Machinery's  
Most Vital Need**

TIDE WATER ASSOCIATED OIL COMPANY  
Wholesale Department  
79 New Montgomery St., San Francisco 20

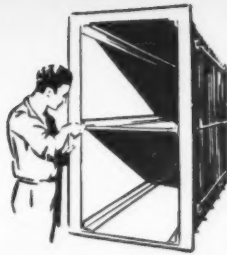
**I'M INTERESTED—** Please give me further details about your "Color-Guide" Lubrication Plan.

Name

Firm

Address

City



# Protect Against **ACID CORROSION**

...Use *Rubber Lining*  
to Lengthen Life of  
Your Steel Containers



Through the use of rubber lining, you can now get the full benefit of the long life and economy of steel in handling, storing and transporting acids and abrasives. Newly developed synthetics are now providing protection against a wider range of acids and higher operating temperatures.

The Western process of bonding rubber to steel assures an adhesion exceeding 500 lbs. p.s.i. Held securely in position, the heavy layer of acid-resistant rubber prevents acid seeping through to the metal.

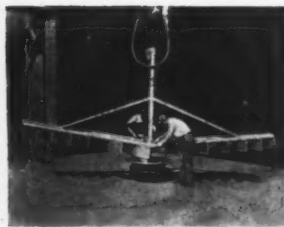
One of the first companies to experiment with rubber linings, Western Pipe & Steel is today the largest manufacturer in the West of rubber-lined steel products. Tanks or equipment of any size can be lined in plant or field.



For full details send for Western's new booklet—"Rubber-Lined Steel."



Motion picture film developing tanks lined inside and out.



Rubber lining agitator to be used in chemical mixing vat.



Running rubber-lined tanks in to steam curing chamber.

## **WESTERN PIPE & STEEL COMPANY OF CALIFORNIA**

**Fabricators • Erectors**

P.O. Box 2015, Terminal Annex  
5717 Santa Fe Ave., Los Angeles 54



200 Bush Street  
San Francisco 6

**BAKERSFIELD, FRESNO, SOUTH SAN FRANCISCO, TAFT, CALIF.; PHOENIX, ARIZ.**

# 1st... by far

among Advertising Agencies in the WEST  
in the placement of Business Paper Advertising

## SPACE PLACED IN BUSINESS PAPERS BY ADVERTISING AGENCIES IN 1945-44

As compiled from reports made to INDUSTRIAL MARKETING by the following agencies:

Rank 1945	Agency	Pages 1945	Pages 1944	Rank 1945	Agency	Pages 1945	Pages 1944
1	Fuller & Smith & Ross, Inc.	15,015	11,361	37	Addison Vars Company	2,413	1,860
2	Batten, Barton, Durstine & Osborn	12,561	10,987	38	The Aiken-Kynett Co.	2,341	2,137
3	J. Walter Thompson Company	11,733	9,001	39	D'Arcy Advertising, Inc.	2,300	2,191
4	G. M. Basford Company	10,353	8,211	40	Buchanan & Co., Inc.	2,287	2,139
5	McCann-Erickson, Inc.	9,445	6,648	41	Gardner Advertising Co.	2,266	2,128
6	Campbell-Ewald Company	9,260	5,045	42	Brooke, Smith, French & Dorrance	2,219	2,147
7	The Buchen Company	8,271	5,143	43	Gardner Advertising Co.	2,170	1,823
8	Murray Breese Associates, Inc.	5,918	3,994	44	Brooke, Smith, French & Dorrance	2,125	1,779
9	The Griswold Eschleman Company	5,733	4,644	45	Geare-Margston, Inc.	2,115	1,578
10	James Thomas Chirug, Inc.	5,214	4,295	46	Witte & Burden	2,103	1,781
11	The Griswold Eschleman Company	4,965	4,323	47	Alley & Richards Co.	2,100	1,784
12	MacManus, John & Adams, Inc.	4,803	3,966	48	Wm. B. Remington, Inc.	2,069	1,903
13	Evans Associates	4,777	2,802	49	Western Advertising Agency, Ltd.	2,017	1,004
14	Foot, Cone & Belding, Inc.	4,591	3,125	50	Alford R. Poyntz Agency, Ltd.	1,940	1,691
15	Albert Frank-Guenther La	4,361	4,522	51	Ronalds Advertising Agency	1,882	1,331
16	Newell-Emmett Co.	4,126	3,020	52	Potts, Collins & Holden	1,869	1,499
17	Cockfield, Brown & Co., Inc.	4,124	3,462	53	Behel and Walde Advertising	1,867	1,646
18	Russell T. Pietersen-Dunl	3,961	4,634	54	Hoffman & York Advertising	1,848	1,805
19	Klau-Van Pietersen-Dunl	3,864	4,016	55	John Falkner Arnold & Co., Inc.	1,847	1,677
20	Klau-Van Pietersen-Dunl	3,791	2,908	56	Aubrey, Moore & Wallace, Inc.	1,821	1,595
21	Compton Advertising, Inc.	3,705	2,887	57	Kreicker & Melan, Inc.	1,751	1,312
22	Kudner Agency, Inc.	3,663	2,742	58	Hutchins Advertising Co., Inc.	1,749	1,582
23	Ketchum, MacLeod & Green, Inc.	3,660	2,902	59	Wallace Davis & Co. Associates	1,690	1,280
24	Sutherland-Abbott	3,563	2,091	60	Oakleigh R. French & Brockson, Inc.	1,680	1,551
25	Horton-Noyes Company	3,368	2,617	61	Gebhardt & Currier, Inc.	1,657	1,093
26	Meldrum and Fewsmith, Inc.	3,218	2,214	62	Atherton & Kelley, Ltd.	1,650	1,292
27	The McCarty Company	3,124	2,090	63	Russell T. Kelley, Ltd.	1,611	1,373
28	Gray & Rogers	3,124	2,090	64	Beeson-Fuller-Reichers, Inc.	1,607	1,396
29	Marschalk and Pratt Company	3,027	1,896	65	Henri Hurst & McDonald, Inc.	1,601	1,621
30	Walker and Downing	2,886	1,896	66	Beaumont, Heller & Sperling, Inc.	1,598	1,301
31	Cory Snow, Inc.	2,649	2,456	67	Dosier-Graham-Eastman	1,586	1,426
32	Charles W. Hoyt Company, Inc.	2,548	2,458	68	The Bayless-Kerr Company	1,567	1,436
33	The Cramer-Kasselt Co., Inc.	2,463	2,049	69	Ferry-Hanly Company	1,528	1,436
34	Reincke, Meyer & Finn, Inc.	2,416	1,571	70	Spencer W. Curtiss, Inc.	1,528	1,079
35	Roche, Williams & Cleary, Inc.			71	Henry A. Loudon Advertising		
36	Mason, Inc.			72	Frank Best & Company, Inc.		

\* Includes Detroit and New York offices  
\* Includes Montreal and Toronto offices  
△ Formerly Davis, Dyke & Co.

Reprinted from  
"Industrial Marketing"  
August 1946

+ Includes Canadian office  
© Formerly Reincke-Ellis-Younggreen & Finn

Your advertising can receive the same deliberate planning  
and the same profitable results as other McCarty Company clients—  
clients whose volume of advertising put us out in front, by far,  
in the placement of 1945 Industrial Advertising.  
May we tell you The McCarty Company Plan for  
simplifying your advertising?

## The McCarty Company

Advertising Counsellors

Established 1919

SEATTLE \* SAN FRANCISCO \* LOS ANGELES \* DALLAS \* PITTSBURGH





## Preventive Clinic

**Question:** To what limits should a manufacturer go to maintain uniformly high quality standards for his product?

**Answer:** To the point where he is satisfied that every single unit he turns out, whether the product be complex or simple, will perform satisfactorily the service for which it is intended . . . in the case of a Pipe Fitting, to guarantee a leakproof and safe connection.

Nowhere is the extent to which a manufacturer goes to assure the performance of his product more vividly demonstrated than in the case of a Grinnell Pipe Fitting.

A preventive clinic staffed by specialists working with the most up-to-date equipment is constantly checking the quality of materials and workmanship. Photomicrographs, comparator tests, tensile testing machine results and chemical analyses insure maintenance of rigid production standards.

WHENEVER PIPING IS INVOLVED

Grinnell's investment in modern testing and inspection equipment is a willing contribution to assure that every connection made by a Grinnell Pipe Fitting is leakproof and safe. To many this may seem like an unnecessarily high standard.

To those responsible for the erection and performance of piping it represents a dependability in quality which prompts them to turn to Grinnell for everything in piping from a tiny tube fitting to a complete power or process piping installation.

GRINNELL COMPANY, INC., Executive Offices,  
Providence 1, R. I. Branch warehouses at Los Angeles,  
San Francisco, Oakland, Seattle.



WHENEVER PIPING IS INVOLVED



## MEYERCORD DECALS



### ...and here is the NEW PACIFIC COAST PLANT that will supply your demands...

Out of this new Meyer cord plant will roll in rapidly increasing volume the most complete line of Decalcomania produced on the Pacific coast.

Fifty years of experience has shown that no single type of Decal is adequate for all conditions and surfaces. Meyer cord's exclusive processes offer Decal nameplates, product decorations and finishes resistant to abrasion, heat and cold, acids, alkali, fumes and moisture—truck decals, window signs and valances resistant to weather extremes, fog, humidity, rain, sun and constant washing.

Meyer cord Decals can be made in any design, colors or size—for application on any commercial surface including rubber and crinkled finish. Investigate the durability, economy and application ease of Meyer cord Decals for product identification, decoration, finishing—and for advertising on store windows and trucks. Ask for a representative to call. No obligation. Address Dept. 102-11.

#### NOW! COMPLETE DECAL SERVICE

- ▼ Spot window signs
- ▼ Window valances
- ▼ Truck lettering, Signs
- ▼ Product name plates
- ▼ Operating instructions
- ▼ Patent data—numerals
- ▼ Decals for Rubber Surfaces
- ▼ Stock and Special Decal Decorations for products
- ▼ Re-creations of wood grain and marble in plastic veneer.
- ▼ Colorful Decals for decorating kitchens, bathrooms, furniture and accessories in the home.
- ▼ Special Decals made with harmless, edible colors for trademarking food products and fruit.

©1946, Meyer cord Co.

## THE MEYERCORD CO.

World's Largest Decalcomania Manufacturers

PACIFIC COAST DIVISION • 4500 DISTRICT BLVD • LOS ANGELES 11, CAL.



**"BOUND TO GET THERE"**

*...At Lower Shipping Costs!*



REG. U. S. PAT. OFF.

## ...WITH *Acme Steelstrap*

The most efficient shipping container is one that has all excess poundage trimmed off and is stronger. Acme Steelstrap builds up strength and makes containers better able to withstand the hazards of transportation.

Acme Steelstrap lowers shipping costs because: (1) original container costs less due to reduced weight of raw material and resultant manufacturers labor, (2) lighter containers mean less dead freight weight and, (3) claims for damage and pilferage are fewer.

Yes, shipping costs go down, profits up, when you use Acme Steelstrap. Investigate now.

### ACME STEELSTRAP SCORES UP TO 11-1 SHIPPING SAVINGS

From an authoritative source comes . . . "we have used Acme Steelstrap extensively and found that it cuts over-all shipping costs considerably. In labor, lumber; nails, screws and bolts; warehousing and shipping space and weight . . . savings, as high as 11-1, were realized over previous methods."

LOS ANGELES 11

SAN FRANCISCO 7

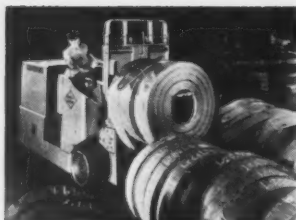
SEATTLE 4

PORTLAND 9

**ACME STEEL COMPANY**

ACME STEEL CO.  
CHICAGO

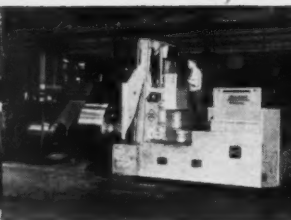




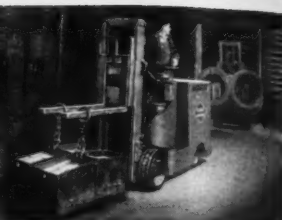
Steel



Building construction



Tin plate



Welding wire



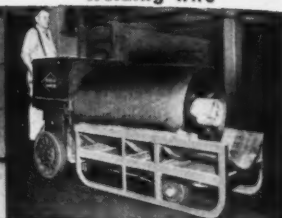
Car wheels



Locomotives



Aircraft



Fabric



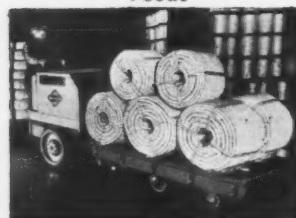
Machine parts



Glass



Foods



Cordage



Rubber

## Customers know these Trucks are worth a wait!



Paper

Because Elwell-Parker Engineers "tailor" each Truck or Crane so it can transport larger quantities of some particular load faster and safer than the owner ever moved it before, and for less money, Elwell-Parkers usually pay for themselves out of new savings within months—and *keep on* earning for years and years. • Because Elwell-Parkers *do* this superior job, customers keep ordering more and more *new* Elwell-Parkers • Because owners are confident that these Trucks do more, and that they get exactly what they want, they are willing to wait for Elwell-Parkers.

Elwell-Parker supplies Trucks engineered to the customer's specific needs—not arbitrary standard models. The Elwell-Parker Electric Company, 4175 St. Clair Avenue, Cleveland 14, Ohio.

For California:  
**IRA G. PERIN**

575 Howard St. • San Francisco 5 • Telephone CArfield 1827  
1612 Maple Ave. • Los Angeles 15 • Telephone PRospect 5911

For Oregon and Washington:  
**COLBY STEEL & ENGINEERING CO.**

525 Central Building • Seattle 4 • Telephone ELIott 5722

# ELWELL-PARKER

## POWER INDUSTRIAL TRUCKS

Established 1893



## In Our Mail Box

**EDITOR'S NOTE:** The following letters refer to the 60-foot passenger bus recently jointly announced by Kaiser and Santa Fe Trailways. A demonstration model of this novel vehicle described in the August issue of *Western Industry*, was built at the Permanente plant near San Jose. It consists of two sections hooked together accordion fashion with two axles on the front section and a single axle for the rear. The legal question involved is whether the bus falls into the single vehicle class, where 35 feet is the greatest length permitted in any Western state, or is a combination unit like a truck and trailer or tractor-semi-trailer which has a permitted length up to 60 feet, varying in different states.

### Only California Says "Yes"

*Editor, Western Industry:*

The manufacturers of this equipment have presented this department with blueprints and models which have been studied by the heads of our Legal Department. They have, also, demonstrated the operation of this equipment to the heads of the various divisions, and others interested, to ascertain its legal status. The department heads have determined this equipment to be of dual unit class which would entitle the combination to a total length of 60 feet. The lighting and signaling devices used are subject to meeting the requirements and approval of the department.

E. RAYMOND CATO, Chief  
California Highway Patrol  
By T. J. Douarin, Sergeant.

### The Book Says "No"

*Editor, Western Industry:*

A copy of the Oregon Motor Vehicle Law is being forwarded to you under separate cover and you are referred to the sections on size, width and construction beginning on page 124. You will note that with regard to length, the single vehicle is limited to a length of 35 feet and a train of vehicles coupled together cannot exceed a length of 50 feet. The Oregon legislature meets in January, 1947, but we are not prepared to say whether they will increase the allowable length of motor vehicles in this state. Your article was very interesting.

ROBERT S. FARRELL, JR.  
Secretary of State  
Salem, Oregon.

### "You Can't Ride Here"

*Editor, Western Industry:*

The Washington Motor Vehicle Code adopted in 1937 carries a provision that prohibits the operation of a trailer for the transportation of passengers.

During the war period it was necessary to use this type of vehicle in the transportation of war workers, so an amendment was passed by our Legislature nullifying this section for the duration of the war. Therefore, at the present time the operation of a vehicle of this type would be permitted. This authority will be automatically cancelled when a formal declaration of peace is made by either the President or the Congress.

J. C. McDUGALL  
Chief Clerk, Motor Vehicle Division  
Department of Licenses  
Olympia, Washington

### Is It Double or Single?

*Editor, Western Industry:*

Section 48-535 of the Idaho Code Annotated states as follows:

"No single vehicle shall exceed a length of thirty-five feet, extreme over-all dimension, in-

(Continued on page 31)

## EDITORIAL COMMENT

### Unemployment Compensation Should Be Cleaned Up

**T**HERE is evident need for a moral regeneration in the administration of unemployment compensation. The closer anyone approaches to the scene, at least in the eleven Western states and probably in most of the rest of the country also, the worse becomes the smell of dishonest, unethical and unsound claims and grants. Apparently administrators as well as claimants regard compensation as something to be dealt out with as free a hand as possible, ignoring the fact that every improper payment penalizes the worthy by increasing the cost of the service.

An equal need exists for revision of the laws themselves, not only to stop present abuses, but to base the statutes more thoroughly on reason and justice, rather than emotion.

Compensation, as *Western Industry* sees it, should serve to protect both the individual and the community. Its legitimate benefits to the individual are: (1) to protect him from economic distress resulting from involuntary unemployment, (2) to give him time to weigh job opportunities, rejecting those for which he is obviously unsuited and choosing the place for which his capabilities and training best fit him. The advantages to the community are: (1) cushioning the economic disruption caused by mass unemployment, (2) encouraging a smooth flow of labor to those employers who can best utilize it, (3) promoting higher productivity of the economic machine by proper placement of the individual, in other words, not putting economic machine by proper placement of the individual, in other words, not putting round pegs in square holes.

All this costs money. It is taxation and nothing else. The compensation fund is not an endless supply of manna from an unseen source; it is built up by taxing the earnings of both management and labor. Consequently any wastage of the fund by those not basically entitled to its benefits is a direct loss to all the rest of the contributors, and a high price is being paid for misuse of the unemployment compensation function.

Unfortunately there is great danger that the state legislatures, instead of tightening up the present laws, will respond to pressure from organized labor and legalize present abuses or liberalize compensation still further. If labor were educated to the fact that honest and efficient administration, coupled with stricter laws, would reduce the tax on each employee's pay check, the pressure undoubtedly would lessen.

Industry would be a long way ahead financially, if it would map out and pursue a long range campaign to put unemployment compensation on a sound basis. Instead of arousing the antagonism of labor by letting the suspicion grow that management would like to see compensation abolished, every effort should be made to enlist the cooperation of labor in a sensible plan that would result in making this service cost less money and give greater protection to those entitled to it.

### A Blessing in Disguise

Management is going through a hard school in industrial relations today, where every advantage seems to be on the side of labor and with nothing in management's favor. Yet those who go to school learn more than those who can play instead of studying. Quite possibly management will in the long run be grateful for the present testing period, because out of it will come sounder ideas and methods than ever were known before.



#### FINGERTIP CONTROL

The release valve is now at the fingertips—eliminating stooping by the operator. Picture at left shows Ruger model H.P. 1 lifting front end of 2½ ton army truck. (9000 pounds—you guess what the front end weighs.)

## New Model RUGER Floor Crane Features IMPROVED PUMP DESIGN

It's here at last! After months of careful testing under actual working conditions, our new model with its sensational new improvement is ready for you—a rugged, powerful, efficient crane which is available for delivery now!

#### **An Entirely New Type Pump**

The new pump now used on the one-ton Ruger is greatly simplified in design and construction. Built to Ruger specifications by one of America's foremost pump manufacturers, it is the finest and most efficient hydraulic pump of its kind. It gives the new Ruger equal or better lifting speed than before—a big factor in fast operation.

#### **Simplified Design**

The new pump is a single cylinder, double action unit with *no cup leathers* and the fewest possible

working parts. As shown above, the release valve is conveniently placed at the finger tips for easy operation. The former tank has been eliminated making the New Model 78 pounds lighter. All parts are easily accessible and can be quickly removed for service.

#### **Proven Performance**

The New Model Ruger is no experiment. It has been carefully engineered and thousands are now in the Eastern states. Owners report greatly increased power, speed and safety, as well as thousands of hours of rugged use without servicing of any kind. Ruger's one year guarantee on this model insures you of care-free service and efficiency. Ready now for immediate delivery.

**Write Today for Prices and  
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P. O. BOX 3821                      PORTLAND 8, OREGON

## MAIL BOX (Continued from page 29)

clusive of front and rear bumpers, and no vehicle equipped with semi-trailer shall exceed a length of 45 feet over-all dimensions, and no combination of vehicles coupled together shall consist of more than two units and, when so combined, shall not exceed a total length of 65 feet; provided, however, that lumber, logging and pole hauling vehicles equipped with semi-trailers shall for the purpose of this section constitute two units."

BOISE G. RIGGS, Commissioner  
Department of Law Enforcement  
Boise, Idaho.

### Not Without Special Permit

*Editor, Western Industry:*

I am inclined to agree with your article, as unless some sort of a special permit was issued these vehicles could not be operated upon the highways of this state, nor in any other state. The state of Utah has substantially the same laws as the state of California with the exception that a single unit may be 45 feet in length, overall.

From the picture of this bus, it would be impossible to operate in this city even with our wide streets and the bus terminals here would have to be rebuilt to accommodate a bus of this type.

It is possible, however, on a certain run, that this bus would be allowed to operate under a special permit where they were hauling men to and from a plant, and not coming into any part of the business district. I understand that this bus is being used in this manner in the state of California.

ALLAN ROGERS, Director  
Motor Vehicle Division  
State Tax Commission  
Salt Lake City, Utah.

### Well, Who Decides?

*Editor, Western Industry:*

With reference to the Kaiser 60-foot bus will say, Colorado law permits a length of 35 feet for a single vehicle, therefore, if this bus is determined to be a single vehicle it would not be permitted to run on Colorado highways.

C. H. GUNN  
Chief of Motor Vehicle Division  
Denver, Colorado.

### Glued Loads

*Editor, Western Industry:*

In reference to your September, 1946, No. 9, Volume XI of the Western Industry, we would like some information regarding the article on page 47 called "Glued Unit Loads Used in Light Commodity Shipments."

We are interested in the type of glue mentioned in the article, and if possible, where it can be bought by us.

We would appreciate any information you can give us on this matter. Thanking you, we are

ALBERT JASSIM  
Sun-Rise Lighting Products, Inc.  
Los Angeles

### Alien Patents

*Editor, Western Industry:*

Many patents relating to subjects of interest to California industries are included in the holdings of the Alien Property Custodian. Some of these should be of value for reconversion.

I should appreciate your informing me whether you are interested in receiving patent information of this kind. If you desire patent information relating to subjects of particular news value to your many readers, please let me know and I shall be glad to supply you with any material available.

HOWLAND H. SARGEANT, Chief  
Division of Patent Administration  
Office of Alien Property Custodian  
Washington, D. C.

## PICK THE RIGHT JACK FOR THE JOB ...

from the complete line of

# DUFF-NORTON JACKS

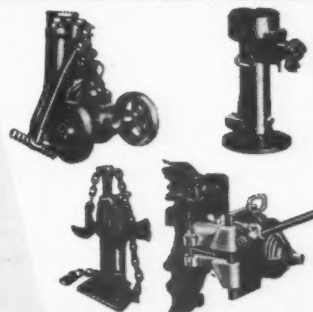


For each type of lifting, lowering, pushing or pulling there is a specific type of Jack—designed to do the job best!

Your industrial distributor will be glad to help you make the proper selection of safe, dependable, easy-operating Duff-Norton Jacks for your requirements. Complete catalog on request.

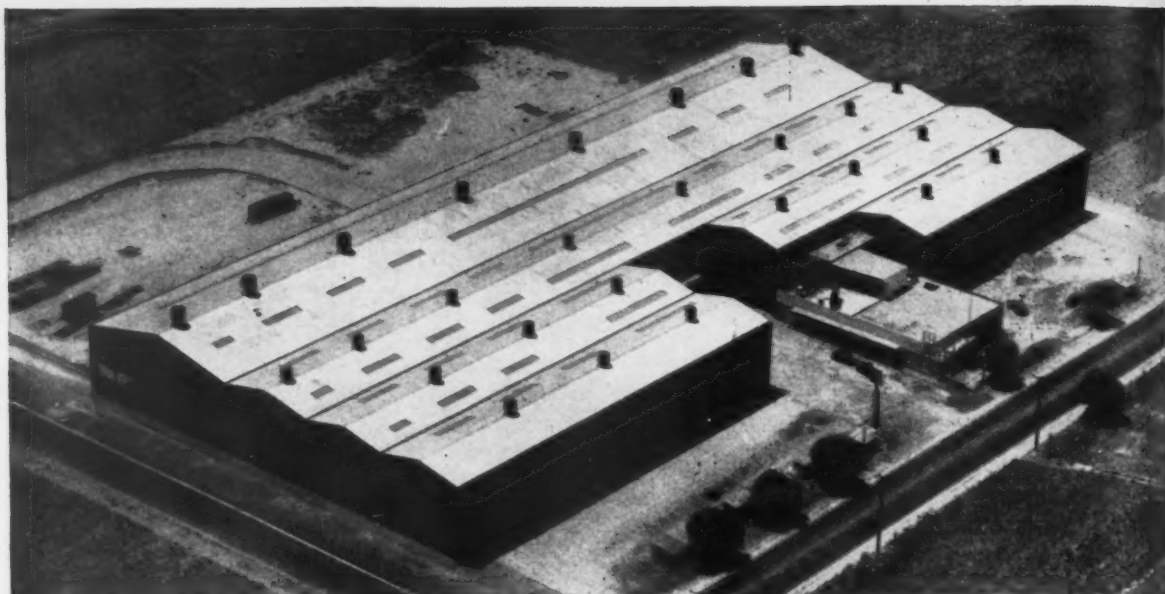
### POINTS TO CONSIDER IN JACK SELECTION

Load to be lifted  
Speed of lifting desired  
Type of lowering  
Height and "raise" required  
Weight of the jack  
Constant or intermittent service  
Outdoor or indoor application  
Close quarters or unlimited room  
Need for foot-lift  
Cost



**THE DUFF-NORTON MANUFACTURING CO.**  
PITTSBURGH, PA.

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1016 HOWARD STREET SAN FRANCISCO, CAL.



## A New Ryerson Steel-Service Plant in Los Angeles

We are pleased to announce the opening of our new Steel-Service plant in Los Angeles. The warehouse and office buildings cover an area of some 200,000 square feet in the Central Manufacturing District, conveniently located for prompt service to the Los Angeles marketing area and southern California.

The most modern cutting and handling facilities have been installed for quick, dependable service. A fair stock of bars, shapes, plates, sheets, tubing, etc. is on hand, but tonnage is still small due to the

current steel shortage—and all sizes are not available. This situation naturally limits the scope of our service. However, you may be sure that we will build up our inventories as soon as possible.

Fortunately, we have a strong experienced steel-service organization here in our Los Angeles plant, and stand ready to cooperate closely with you whenever you call.

**JOSEPH T. RYERSON & SON, INC., 4310 East Bandini Boulevard, Los Angeles. Mail Address: Box 3817, Terminal Annex, Los Angeles 54.**

# RYERSON STEEL

PLANTS: LOS ANGELES, CHICAGO, MILWAUKEE, DETROIT, ST. LOUIS, CINCINNATI, CLEVELAND, PITTSBURGH, PHILADELPHIA, BUFFALO, NEW YORK, BOSTON



# Spotlight

## on the NEWS

**WESTERN INDUSTRY**  
**FOR NOVEMBER, 1946**

VOLUME XI

NUMBER 11



Much of the Northwest is watching with considerable interest a revolt being staged against the Civilian Production Administration by some hundred owners, contractors, building materials dealers, and building trades representatives at Grants Pass in southern Oregon.

An estimated 20 to 30 home and commercial building projects are being actively continued there in direct opposition to stop-work orders issued by CPA. Although Northwest compliance officials of CPA stated the stop-work orders would be strictly enforced, Wilson W. Wyatt, National Housing Administrator, who was in the Northwest at the time the revolt broke into the open, failed to comment on the situation. During a brief stop in Oregon, Wyatt received the most severe criticism of the CPA program and procedure that he had heard up to that point in his swing around the country.

The official attitude in the state of Washington was quite different. There Governor Wallgren called for a 90-day moratorium on all commercial and industrial building except those contributing to the furnishing of building materials, and urged that CPA review its prior authorizations and cancel all permits where construction had not actually begun. The moratorium called for by the governor would be voluntary. Mon knows his voters.



### Still Need an Engine

Lockheed's absorption of Consolidated-Vultee fulfills some of the predictions made by Robert Gross when he let down his hair at a Harvard Alumni Club dinner in Los Angeles a year ago. Others seem to be in the making.

At that time he said there were too many airframe manufacturers and that some consolidations seemed to be inevitable, not only among themselves, but also with engine builders. A few weeks later he pre-

sented to the Lockheed board of directors a report amplifying what he told his fellow Harvardians, and the report soon became current that the deal would be Lockheed and Curtiss Wright.

Now it turns out to be Consolidated-Vultee, which leaves the Pacific Coast industry still entirely in the airframe class. Apparently it would pay to watch what is going on at Menasco, close by to Lockheed at Burbank. They have been doing a lot of jet engine work for Lockheed and recently pulled in a lot of talent from the aviation engine field.

Perhaps here is the future hook-up that will give the airframe manufacturer his own engine, as Ford, General Motors and Chrysler in the automobile field all have.



### Steel Instead of Stock

Colorado Fuel & Iron Corporation now has a former Republic Steel operating man as president. Carl W. Meyers succeeds Perry Holder who specialized in stocks more than in steel.

Naturally, his appointment has roused talk of a merger of the two concerns, but Charles Allen, CF&I chairman, emphatically says "No." Some observers recall that equally emphatic denials were made two or three years back when there was talk that the New York investment group headed by Allen would merge CF&I and Wickwire-Spencer Steel Company. Ridiculous, it was said. But CF&I soon absorbed Wickwire-Spencer.

Meyers announced a \$5,000,000 expansion program at the Pueblo mill, and said other industries would be invited to locate there. Rumors that the corporation is going back into Colorado politics were spiked in a hurry by the new president.

He rose from the ranks to become superintendent of the McDonald plant of Carnegie Illinois in 1923, moved over to Republic in 1931 and advanced to district manager of the steel alloy division. He served as assistant director of the steel di-

vision of WPB in the war, and went to Europe in the spring of 1945 as leader of the steel group of the U. S. Strategic Bombing Survey. Meyers wants to make steel.



### Stanford Takes the Ball

Stanford University will establish and operate the industrial research institute for the West that Ernest Black labored so diligently to get private industry to finance. It will be known as Stanford Research Institute, a non-profit organization, and all research problems of industry will be within its scope, whereas similar institutions elsewhere in the country restrict their field to the natural sciences. Research projects for business, industry and government will be accepted.

When Atholl McBean, ceramics manufacturer and Stanford alumnus, was asked to head the fund-raising campaign for the Black scheme, he thought the project could be more suitably handled by a university. Accordingly Dr. Henry T. Heald, president of Illinois Institute of Technology (Armour Institute) was called West to survey the situation.

Dr. Heald recommended establishing the institute at Stanford. Director will be Dr. William F. Talbot, president and technical director of the Fine Chemicals Division of the Sun Chemical Corp. (formerly General Printing Ink Corp.). He is the inventor of the Melamine resin (plastics) which are used for moldings and castings.



### "Paradise Right Now"

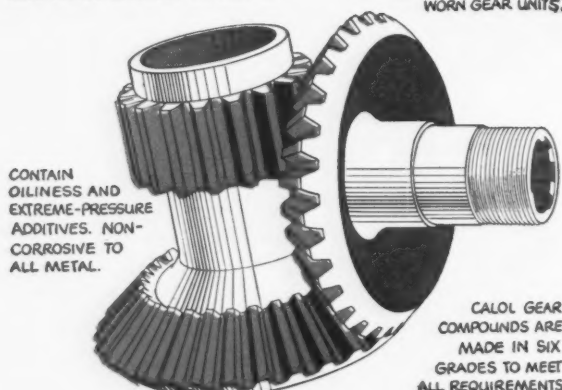
"Employers have their minds on something far off; labor says 'let's have Paradise right now,'" remarked an employers' representative. Here is the printers' demand for instantaneous celestial bliss: \$3 an hour, four weeks vacation, 10 paid holidays, 15 days sick leave, severance pay one week for each 6 months.

# STANDARD ENGINEERS NOTEBOOK



CALOL GEAR COMPOUNDS PROVIDE EFFICIENT LUBRICATION FOR A WIDE RANGE OF ENCLOSED GEARS.

HIGH VISCOSITY—REDUCE LOSS FROM LEAKAGE IN WORN GEAR UNITS.



CONTAIN OILINESS AND EXTREME-PRESSURE ADDITIVES. NON-CORROSIVE TO ALL METAL.

CALOL GEAR COMPOUNDS ARE MADE IN SIX GRADES TO MEET ALL REQUIREMENTS.

FLOW FREELY IN GEARS AT ALL ORDINARY OPERATING TEMPERATURES.

## Special additives prevent excessive gear wear

To meet the hard service conditions in heavy industrial enclosed gears, Calol Gear Compounds in the proper viscosity grade are recommended.

These specially compounded lubricants keep a tough film on gear-tooth surfaces under extreme pressures. If, at any time, the film is broken in front of meshing teeth, its oiliness and extreme pressure additives prevent welding and scoring. All grades have a low pour point, reducing drag and making starting easier. They retain good body at working temperatures and are non-corrosive.

All grades of Calol Gear Compound are relatively heavy. In worn gear sets with increased clearances, they cushion teeth, reduce vibration and noise, and provide economical lubrication.

Calol Gear Compounds meet all lubrication requirements in a wide range of conditions and gear types. They are manufactured in six viscosity grades, Numbers 120, 135, 150, 190, 225 and 410.

Standard Fuel and Lubricant Engineers are always at your service. They'll gladly give you expert service—make your maintenance job easier. Call your local Standard Representative or write Standard of California, 225 Bush St., San Francisco 20, California.

## All Calol Cutting Fluids get breakdown test

To make sure that every Calol Cutting and Soluble Oil will preserve machine tools for maximum periods and produce the finest possible finish on the work for which it is recommended, Standard of California scientists developed the Drilling Torque Tester.

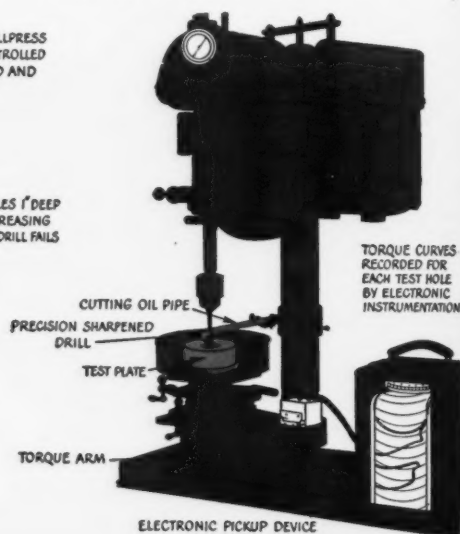
A modified drillpress, the speed and feed rate of which can be controlled, is used. For each test, a series of holes 1 inch deep is drilled with a precision-sharpened drill into a test plate. A constant drill feed is maintained with speeds increasing 100 rpm for each test hole. An electronic device records the torque curve for each hole.

The oil being tested is applied to the tool and work by a regular flow pipe. Oils are rated in terms of the speed at which drill failure occurs. Drill failure is indicated by a peak on the torque curve.

Every Calol Cutting Oil and Soluble Oil is evaluated in this "breakdown" test. For complete information about Calol Cutting Fluids write for the free booklet on that subject.

MODIFIED DRILLPRESS PROVIDES CONTROLLED DRILLING SPEED AND FEED RATE

SERIES OF HOLES 1" DEEP DRILLED AT INCREASING SPEEDS UNTIL DRILL FAILS



TORQUE CURVES RECORDED FOR EACH TEST HOLE BY ELECTRONIC INSTRUMENTATION

ELECTRONIC PICKUP DEVICE

FOR EVERY NEED A **STANDARD OF CALIFORNIA** JOB-PROVED PRODUCT

# WHEN WESTERN PRODUCE TAKES TO AIR, RESEARCH HAS TO KEEP UP

**Cost Still the Biggest Problem, But Progress Is Encouraging.  
Containers Must Protect Against Sudden Temperature Changes**

THE transportation of fruits and vegetables by air is not a new venture—it started before the war.

However, the war gave it a tremendous impetus because freight-carrying planes were developed at a terrific rate, and at government expense. This alone has saved the fruit and vegetable industry not only many years but also many thousands of dollars which the experimentation would have cost.

Some 38 fruit and vegetable packing and shipping companies have banded together under the name of "California Co-operative Packaging Association." These companies, which represent quite a large portion of California producers, are going

By S. R. WHIPPLE  
Assistant Chief, Bureau of  
Fruit and Vegetable Standardization  
California Department of Agriculture

along with the development of consumer packaging and air transportation, and plan to extend their operations over the United States. They have built two modern packaging plants which have helped lick some of the problems involved in using a new form of transportation.

It is their hope that this new mode of transportation will give results much faster and arrive at a more sound practical operating basis if its early development is thoroughly planned by a cross-section of

the fresh fruit and vegetable industries in California, all working together.

Their reasoning is that rail and truck lines have met the needs of the Nation to the present, but future packaging and transportation at its best *must* be carefully planned.

The airlines have recognized this situation and are rapidly setting up research to develop their side of the problem. However sound their plans may be, there are still many problems to be solved before any large scale operations become a reality.

I have heard it said on rather good authority that it was possible to pre-cool fruits and vegetables by taking the plane to a sufficient altitude to get the outside

• Western fruits and vegetables are being airborne in ever increasing numbers, but the industry still has a lot of problems to overcome.





temperature low enough to do the pre-cooling job by merely opening vents in the side of the plane.

This is not yet possible. It costs too much money to lift 12,000 to 18,000 pounds of fruits and vegetables over a 12,000-foot height, which must be reached in order to get the necessary temperatures.

The biggest problem is the cost. People in the industry tell me that they have cut the cost of transportation from 84 cents per ton mile down to 15 cents per ton mile within the last 12 months. Their investigation shows that if they can arrive at a figure of 10 cents per ton mile they can really "go to town," to use their own words. Certainly the reduction from 84 cents down to 15 cents shows they are getting results in the right direction.

Planes presently in use carry 18,500 pounds payload, at 200 miles per hour at an average altitude of 11,000 feet. This appears to be the best operation arrangement and will put a plane load from California into Chicago in 12 hours.

It takes 24 hours to pick, pack and cool the load at point of origin at the present time. The plane can be loaded in 50 minutes, and then is 12 hours in flight to Chicago or 19 hours to New York. This 36 hours seems to disprove all the talk about picking today and eating tomorrow in the East, since we must also allow time for distribution.

### Waste Preys on Produce

Surveys prove that a huge percentage of all produce packed in wholesale containers in California is wasted before it gets to the consumer and, of course, the whole industry suffers because of this loss.

Think for a minute how much the transportation bill is for produce shipped which cannot be sold because the housewife finds it bruised in shipment or rotted from high temperatures in the retail store; or possibly the company carrying it from the central market at Chicago to a smaller town does not use a refrigerated truck and the commodity gets a nice cooking over the highways for four or five hours. Most of this cost is caused by weather and improper handling during packing and transportation. It comes about despite present-day quality standardization of fruits and vegetables.

Unquestionably, standardization will have to keep step with advances in the handling, packing and shipping of various commodities.

Air shippers will soon want quality and pack regulations set up to meet their special needs, because a container that is practical for air shipment may be non-standard under the present standardization law set up for rail and truck shipments.

Assuming a rate of 10 cents per ton mile, the cost of transporting products over a 2,000-mile haul would be 10 cents per pound. At this rate, reducing the

weight of the container one-half would result in a saving in transportation costs of 1.4 cents per pound for strawberries, 0.5 cents per pound for lettuce, and 0.6 cents per pound for tomatoes. As a result of reducing the weight of the container one-half, the lower transportation charge is about equivalent to the current cost of standard containers.

Because of this high cost per pound the importance of light-weight containers for air shipment is increased. They are possible not only because shipments by air are not subjected in transit to as severe shocks as are rail-borne shipments, but also because in most cases containers need not be iced.

### Product Protection Important

However, the advantage in light weight is partly offset by the fact that the product must still be protected from rough handling before it is loaded and after it is removed from the plane. High unit costs per pound undoubtedly will encourage more careful handling on the ground.

Containers that afford some protection against changes in temperature will be particularly useful for perishable shipments. Planes encounter a wide difference in temperature between the ground temperature and cruising temperature, as well as between originating point and terminal point.

For example, a shipment of perishables from California may experience a ground temperature of 80 degrees; a cruising height temperature of 40 degrees in California; 10 degrees below zero in the North; and a ground temperature of 30 degrees in New York City.

How should fruit and vegetables be handled for air shipment? Will transportation by air mean packaging on the West Coast or packaging on the East Coast? Frankly, I do not believe the shippers really know which is the better way. There are many arguments in favor of both sides and they generally revolve around a given commodity.

### First of All—Selection

One of the musts in pre-packaging and air transportation is proper selection of the produce in the field. The quality and maturity of fruits must be determined before picking to insure suitability for air freight; in general, they must be more thoroughly vine-ripened or tree-ripened than when regularly shipped by rail.

At the present time lettuce growers are planning to buy aluminum baskets in which to loosely place lettuce for air shipment east. The lettuce will be packed for sale in the eastern markets, it will be selected from certain fields of high quality, will be partially trimmed in California, so placed in these aluminum baskets as to avoid bruising, transported East where a few more leaves will be removed, and then,

48 hours out of the California field, will be individually packaged in cellophane.

Last year the shippers tried this out in five eastern markets; plane loads of lettuce were delivered twice a week to each market and it was found that the housewives bought it in preference to other lettuce.

It has been proved that carrots packed in cellophane in California sell extremely well when transported by air; also, hard ripe tomatoes seem to be a natural for pre-packaging and are well accepted in the East at around 50 cents a pound. Four to five tomatoes were put in one-pound packages.

The machine that is now making this box can be adjusted to stitch any size box. No longer can the box-size be standardized. Since the size of a container can be changed in two minutes, the law will need some elasticity to keep up with the changing container sizes.

Once the proper product for shipment is selected it must then be delivered from the field to a pre-cooling plant and pre-cooled to a temperature of at least 38 degrees. This does not affect standardization so much but the next step does. The commodity must then be sorted as to quality, graded for size, and packaged either in wholesale or in consumer packages. The packages are then placed in wholesale containers and stored in a cooling room to further cool the produce and await loading on the plane.

### Merchandising Changes

This will mean pre-cooled plants adjacent to the airport so that the loading of produce from such plant into a plane can be accomplished with a minimum loss of refrigeration and time. Schedules must be worked out that will enable planes to be available at point of loading so that the transportation is such that they will arrive at destination to coincide with market operations.

The future will find advances all down the marketing line. The planes carrying the produce will be insulated and equipped with some type of refrigeration for fueling stops. Trucking equipment will be properly insulated and available at the airport on arrival of the plane to transport the produce from the plane to a central refrigeration plant or to retail market outlets.

Retail markets will have refrigerated self-service display compartments in which to store and hold the merchandise in its fresh state.

In conclusion, even though great progress in air transportation and pre-packaging has been made, plenty of changes are still coming before it settles down to a volume business.

You can be sure of one thing, and that is that air transportation of fresh fruits and vegetables is here to stay and will increase just as fast as facilities can be made available and the same applies to pre-packaging in consumer size packages.



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• Rapid setting of wood glue by dielectric heating being explained at the conference by Dr. R. A. Nielsen of Westinghouse laboratory.

## ELECTRONICS—High Frequency Heating

**H**IGH frequency heating is a new industrial tool with an increasing number of applications.

In the metals industry, high frequency induction heating is successfully used for forging, melting, soldering, brazing and pre-heating, also for heat treating, where it is applied to localized hardening, stress relieving and annealing.

Dielectric heating is used for bonding, stitching, forming, molding, glueing and setting in the plastics, furniture, plywood and veneer industries. It is also applied with notable success in core baking in foundries.

It is believed that dielectric heating is commercially applicable in the food industries to balancing, pasteurizing, cooking, sterilizing, enzyme control and de-freezing.

High - frequency - heating conferences held within the last year in Detroit, Pittsburgh, Philadelphia, Chicago and Los Angeles have given considerable impetus to the application of this technique in industrial plants. For example, the possibility is being studied in a plant on the east side of San Francisco Bay for installing 1,450 KW which would replace the use of surplus natural gas and would be paid for by the reduction in scale loss.

The most recent conference, held in San Francisco in September, summarized the latest developments and discoveries, as well as giving simple explanation of the theory of high-frequency heating. A summary of high-lights of information at this well-attended and well-organized confer-

ence, is accordingly given in the following condensations of several of the papers presented.

### How Induction Heating Works

By PAUL MORTON  
University of California

**I**NDUCTION heating is the process of heating conducting materials by setting up electric currents in them without actually connecting them to a source of electric energy.

The electric circuit which sets up the changing magnetic field is called the primary or inductor. It is usually of copper wire or tubing connected to an alternating-current generator, and sometimes wound upon an iron core in which a magnetic field can easily be established.

An iron core, however, is not essential, and in induction heating it is usually omitted. Since the primary currents are often very large, water is commonly circulated through the primary copper tubing to cool it.

The conducting material in which the induced currents flow is called the secondary or load circuit, or sometimes simply the charge. Since it need not be connected to the primary or to the electric generator it can be completely surrounded by glass or other insulation—in fact, one of the important applications of induction heating is for heating vacuum-tube electrodes

after these metal parts have been completely enclosed.

Any conducting material can be heated by this method, but only in certain applications is induction heating commercially practical. This is because it is usually more expensive and therefore must show other advantages over the cheaper methods.

The fact that the current, and therefore the heating effect, can be concentrated in a thin layer near the surface of the material to be heated is a valuable peculiarity of induction heating. The thickness of the heated zone depends upon the frequency, and by proper choice of the frequency the depth of the layer heated can be accurately controlled.

As would be expected, the depth of current penetration depends upon the magnetic and electric properties of the material to be heated as well as upon the frequency.

The "depth of penetration" is actually the depth at which the current is about 37% of its value at the surface. About 88% of the total heat is generated in this surface layer, and the total heat is the same as it would be if all the current flowed in the surface layer.

When magnetic iron is heated by induction the heat is at first confined to a very thin shell, but as this shell reaches the Curie temperature (780°C or 1400°F) the heating occurs largely at the boundary between the magnetic and non-magnetic regions, and by controlling the time of heating the depth of heated shell can be controlled. This is especially important

for hardening applications, where the hardening is done by quenching with water or otherwise when the desired depth has been heated.

Applications of induction heating can be classified according to the density of heating—that is, the watts per square inch of surface heated.

Since high-frequency heating is almost always more expensive than other methods, it must show some other advantage that makes the overall cost of the manufactured product less in spite of the expensive heat. The advantages of induction heating are usually found under one or more of the following headings:

1. It increases the speed of the process and saves labor cost.
2. It confines the heat to the desired area, thus reducing the overall power requirement.
3. It saves material by more efficient use of solder, brazing alloy, or plating metal.
4. It produces a result not possible by other methods—for example the heating of a metal part totally enclosed in glass.
5. It improves the quality of the product because it can be more accurately confined and controlled than other forms of heat.

These advantages frequently outweigh the higher cost of heat per B.T.U., and make the overall economic picture very attractive.

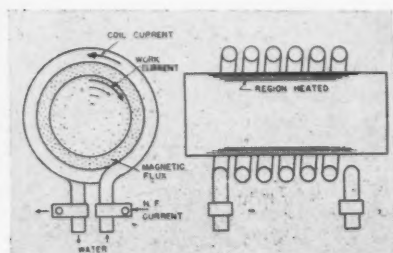
## Dielectric Heating

By CHARLES CALVERT  
Precision Manufacturing Company  
San Francisco

**T**HE possibilities of dielectric heating are just beginning to be understood. Frankly, not all of its applications are known, but fundamentally it is a method of creating heat within electrically non-conducting materials. It is consistent in performance, stable in operation, and adapts itself easily to accurate control.

Dielectric heating is a method of using radio frequency power in manufacturing process where application of heat is necessary. The dielectric heater is simply a frequency converter which takes 230 volt 60 cycle line current, steps it up to several thousand volts, and then changes it to direct current.

By means of high power vacuum tubes this high voltage direct current is converted back again to alternating current. By proper choice of circuit components, this frequency can be made anything desired from a few hundred cycles per sec-



•Typical arrangement for induction heating



• Roger W. Dexter of Dexter Metal Treating Co. Oakland, who describes heat treating techniques elsewhere on this page, looks over a G.E. electronic heater his firm uses.

ond to millions of cycles per second. There is nothing mysterious about this process; this is still the same electricity that PG&E furnishes you. The only thing that has been changed is the voltage and the frequency.

Radio stations use this same method with refinement, but the end result is the same radio frequency power that the dielectric heater produces. The object is to get brute power as simply and as cheaply as possible in a small package.

For dielectric heating use, this high frequency, high voltage power is concentrated between two metal plates or electrodes which are insulated from each other and separated by an air gap. These two electrodes form a condenser which has a tremendous electrical strain between its plates.

When any electrically non-conducting material, technically known as a dielectric, is placed between these plates, this voltage strain causes a molecular disturbance that generates heat inside the material. If the material is a perfect dielectric no heating will occur.

Most present day plastics, however, are sufficiently far from being perfect dielectrics that the condenser field generates enough heat in the material to heat it in a few seconds. This is why it is known as the dielectric loss method of heating.

The plates themselves do not heat up, but conduction of heat from the hot materials may warm them. If no material is placed between the plates there is no heating effect, because there are no losses in air. But conversely if any electrical conductor is placed between these plates, it acts as a short circuit; there is a big spark and fuses blow.

We must emphasize that this condenser field method of heating is not some new

and strange kind of heat, but behaves exactly like B.T.U. from any other heat source. This heat may be concentrated to better advantage, more efficiently, and what is most important in plastic molding, this heat is generated inside the material itself and insures that the core of a plastic preform will be mushy enough for a fast press closing time without damaging dies and presses.

This dielectric loss method of heating is applicable only to non-metallic materials normally considered poor conductors of electricity such as plastics, wood, glass adhesives, rubber, paper and foods.

## Heat Treating

By ROGER W. DEXTER  
Dexter Metal Treating Company, Oakland

**I**NDUCTION heating may be divided into two categories—low frequencies for heavy sections and deep penetration, higher frequencies for medium and delicate parts, shallow penetration.

It should not be considered merely from the standpoint of its being a high production tool, but more specifically from the possible advantages of this method of heating.

Exact control over the hardened section, use of hardenable materials and selection of simple coil design and simple fixtures that will handle the miscellaneous small quantities which are most often encountered, are just some of the reasons why induction heating equipment offers so many possibilities. Just ask yourselves these questions:

If the wearing portions of the part you have in mind could be hardened to the best degree of hardness for its application without affecting threaded portions, sharp corners, etc., and of course without objectionable distortion, what would be the advantages?

Obviously the first answer is a better mechanism in service. The second answer is simplified manufacturing procedure. Having the hardness where it is required, and only where it is required, helps to simplify final machining operations as well as assembling operations.

Next question is: Are there parts that because of previous problems of distortion and machining have been used at a hardness lower than that most suitable for best wearing properties? How can induction heating help to produce a better part?

In this connection, think of items such as slender shafts, piston shafts, rocker arm shafts, etc. Any of you who have worked with this type of part are more than familiar with the problems involved in getting reasonably good wear resistant surfaces without excessive brittleness or distortion.

By the use of carefully controlled feeding mechanisms, such parts can be induc-

tion hardened for their entire length or portions of their length with a remarkable freedom from distortion, and because of the fact that the core material is completely unaffected by the induction heat, brittleness is not a factor. The depth of penetration of the hardened area should be governed by the part itself, and the frequency and material should be selected to best suit these requirements.

One of the simplest methods of approach and one which can probably fulfill many of your requirements without a change in design or material is the selective hardening of parts made from low carbon steels, which have been carburized. Ball and adjusting screws are an example.

## Forging of Metals

By HARLAN A. MESSNER  
Ohio Crankshaft Company, Los Angeles

**W**HILE the heat generated in a metallic charge by high frequency induced electric current occurs in the surface layers of the metallic material, it is entirely possible to obtain through-heating of reasonably symmetrical parts without an appreciable differential in temperature between the outside and the core.

It is necessary, however, that the power output of the induction heating machine be reduced to allow the heating from the heated surface to conduct in toward the center of the charge, without obtaining too great a differential in heat between the outside layer and core.

By proper applications of power and frequencies, it is possible to heat uniformly a 3" diameter solid bar throughout its cross section without overheating of the surface layers. This is particularly beneficial where silver brazing, forging, normalizing, stress relieving, through heating of bar stock and shrink fitting operations are concerned, since in the above applications, it is imperative that uniform temperatures be attained throughout the cross section and not have high surface temperatures and a cold core.

Under these conditions and where all other variables are held constant, such as frequency, coil or inductor coupling, etc., the power input to the piece being heated must be reduced. Where controlled localizing heating is required and a minimum of warpage is imperative, induction heating is certainly a production tool to be placed in a production line with a subsequent reduction of processing costs.

\* Top picture: Bert De Pew of General Electric demonstrates induction heat. Center: J. H. Gumz, manager of commercial and industrial sales, Pacific Gas & Electric Co. (general chairman of the conference), and D. V. Doub, his assistant. Bottom: Harlan Messner of Tocco, showing induction heater.





## Brazing .. Soldering

By JOHN ROSS  
Handy & Harman, Los Angeles

THERE are many distinct advantages to the use of induction heating for silver brazing, both from the viewpoint of a practical heating method as well as permitting successful use of the silver alloy.

Together they are a natural team, giving the following advantages:

1. Simplicity of operation. The operations are extremely simple, making it possible, therefore, to use unskilled operators. It is of decided advantage to have push-button control, particularly when a great many pieces are being produced. In addition, each joint is uniform whether one hundred or one million are made.

2. Low cost. While the metal silver is relatively expensive and represents a definite percentage in the various silver brazing alloys, it has been proved that the actual cost of making a silver brazed joint is very low. The primary reason for this is the fact that so little quantity of alloy is needed to make a satisfactory joint. Furthermore, the alloy cost alone is not the only factor to consider in making a joint. The other operations, such as cleaning after brazing, speed of operation, reliability, etc., are factors definitely favoring the low-temperature silver brazing alloys. The cost to operate the induction generator is very low, too, usually running in the neighborhood of one-half cent or less per piece heated.

3. High speed. Brazing by high frequency electric induction is inherently a fast operation, particularly when using the low-temperature, fast flowing silver brazing alloys. For large scale production this is of definite advantage.

4. Control of heat. The heating of parts can be confined precisely to joint area. That is, of course, a factor in the low cost and high speed of operation but, in addition, there is very little oxidation, which means little or no cleaning of parts. Also, there is minimum annealing, a very important factor when high strength is a major consideration. Distortion which sometimes develops with other methods of heating can be reduced or entirely eliminated by induction heating.

## Banking Foundry Cores

By R. W. WELD  
Pacific Scientific Company, San Francisco

THIS new method of dielectric baking of dry-sand cores produces heat by an entirely new principle and with a hitherto unknown uniformity and speed. In contrast to core baking, which unavoidably creates a higher temperature at the core surface, dielectric heating distributes heat uniformly throughout the mass of every

core which is placed in its high frequency field.

Each unit mass of every core thus receives the same amount of heat energy. Other factors contributing to the high quality of dielectrically baked cores are good green strength without cereal binders; minimum gas production during pouring; high surface hardness and tensile strength and dimensional stability.

With the electronic baking of cores, time savings occur in the high core production rates; in the elimination of lengthy cooling-off periods; in the excellent collapsibility and shake-out; in the elimination of blackening and in fewer rejects.

Let us see what can be accomplished in time saving by the combination of dielectric heating and thermo-setting resin cores. A standard tensile strength core specimen used in testing, and having one square inch cross sectional area, will bake in 30 seconds. The same size core, made of an oil-sand mixture, would require one hour baking in an oven. A large core 10 1/2" square and 2 1/16" thick, weighing 11 pounds, bakes electronically in 10 minutes, as compared to 2 1/2 hours in an oven. Unbelievable as it may seem, these are actual production figures.

Space savings are noted in the small area occupied by generator and electrode tunnel; the discarding of racks, and the release of space ordinarily occupied by cooling racks.

At best, foundry workers operate under difficult physical conditions. Dielectric baking of resin-type binders eliminates heat from ovens and fumes, smoke and odors from the core room.

Baking of cores, made with thermo-setting binders, by dielectric heating, meets in all respects, the current demands on the foundry industry, for increasingly rigid controls on core quality and conformity to casting needs. The initial cost of installing dielectric heating equipment, in a foundry, is soon offset by the savings and improvements made possible by the use of this modern electronic baking process.

## Canning Industry

By DR. JOHN J. JACKSON  
American Can Company

MUCH further scientific study is necessary to establish any basis for the sterilization of canned foods by irradiation without heat.

The possible use of electronic radiation (radio frequency power) heating as a

means of sterilization is on a more definitely established scientific basis, but many practical problems remain to be solved for successful application and the costs appear high enough to cast doubt on profitable competition with fresh or frozen foods as well as foods processed by other means.

There are two basic approaches to the sterilization of canned foods by electronic means.

1. The microorganisms might be destroyed by some lethal effect of an electronically produced radiation without the aid of heat. Radio frequency electromagnetic radiation, ultraviolet rays, X-rays and cathode rays are possible types of radiations for such treatment.

Enzyme inactivation might also be accomplished by the irradiation or it might be achieved by low temperature heat treatment and it would then only be necessary to destroy the heat-resistant microorganisms by the irradiation of the product.

Since the relatively high temperature—long time heat treatment required for sterilization of many canned foods has an important influence on their quality and acceptability, the idea of sterilizing with little or no heat is most intriguing in view of the possibility of obtaining preserved foods of fresh, uncooked characteristics, or cooked only as for serving. It is also conceivable that the quantity of radiation might be small enough to permit reasonable costs on a mass production basis.

2. On the other hand, dependence might be placed on the well established heat destruction of microorganisms and enzymes by using electronic radiation (radio frequency power) to produce the heat.

The achievement of a uniform and rapid temperature rise throughout the product would permit sterilization without the overcooking of the outer portions of the product which is inevitable when packaged solid or semi-solid products are heated by conventional methods in steam retorts.

This might carry the industry a long way toward the goal of a freshly harvested or freshly cooked quality preserved foods, but would be limited by the necessarily slow cooling cycle which would follow the electronic heating cycle.

The operating cost of this procedure is relatively easy to analyze since the quantity of heat required to bring the canned products to a temperature which would achieve rapid sterilization and the costs of R.F. power are well established.

Cost of R.F. power, including tube cost, approximates 12 times steam cost. However, the cost of steam for sterilizing is very low and the R.F. power cost could be met by a premium of a few cents per case of canned goods.

The cost of equipment is harder to estimate. Amortization figures for generating equipment appearing in the literature are not unreasonably high, but are presumably

EFFECTIVE CURRENT PENETRATION  
DEPTH IN INCHES

Material	60 Cycles	10 KC	100 KC	500 KC	1 MC
Copper	0.32	0.025	0.008	0.0035	0.0025
Aluminum	0.45	0.035	0.012	0.005	0.0035
Brass	0.71	0.035	0.018	0.008	0.0035
Iron (cold)	0.051	0.004	0.0013	0.0006	0.0004
Iron (hot)	3.10	0.240	0.075	0.035	0.0240

88% of the total heat is generated within the surface layer.



based on year around operation rather than the short packing period for seasonal products. Furthermore, the cost of the auxiliary equipment required to apply the power to the product is unknown, but undoubtedly would be substantial. The total investment for this heating equipment might easily approach the entire cost of a conventional cannery.

## Sterilizing Food

By DR. RHETT G. HARRIS and  
DR. JAMES W. BARTHOLOMEW  
University of Southern California, Los Angeles

**W**E HAVE been subjecting food products, both liquids and solids, to radio frequencies, and have studied the effect of these microwaves upon the microflora, both molds and bacteria, contained in or on those products; dairy products have been our major problem, to date.

Our aim was, of course, to sterilize the product, preferably in the absence of heat. This, in most instances we were unable to accomplish.

But, the important thing that we did find was: *radio frequencies, alone, and void of any thermal effects, may produce significant decreases in the numbers of viable bacteria present in a liquid medium.* Sixty to 80 per cent of the bacteria were killed.

The above studies were conducted upon cream inoculated with a pure culture of *Streptococcus lactis*, the common milk souring organism. Standard methods of milk analysis were used to detect the number of viable organisms present.

Encouraged, we repeated the experiment allowing the cream samples to remain in the dielectric field for sufficient time to become heated. Superimposing heat factors upon the "cold" killing found above, it was found that the test organism, *Streptococcus lactis*, was easily destroyed . . . and in less time than the accepted thermal death range for this organism would demand. This was sterilization.

### Killing Mold Spores

Our next experiments were conducted using radio frequencies applied to the spores of the common molds, species of the genera *Aspergillus* and *Penicillium*, suspended in distilled water. Water of this quality was used, as it was found that the solute molecules of Los Angeles tap water were in sufficient concentration to effect, and cause, excessive heating when it was exposed to a dielectric field.

Frequencies which we knew were effective in the destruction of certain bacteria,



\* Top picture: Demonstration group. Center: Lee Call of Victor Equipment Co. Bottom: Kenneth Smith, Electronic Eng. Co., with "electronifier" for hot-dog cooking.

*Streptococcus lactis* in particular, were found to be ineffective against mold spores. Indeed, our investigations have been unsuccessful in finding a wave length that will produce comparable results to those noted in respect to certain bacteria.

Our experiments, to date, have shown that mold spores are not destroyed unless the temperature of the material in which they are contained reaches a temperature of at least 140 degrees F. This is in agreement with previously reported results. A significant finding, however, was again as above, namely, that the thermal death time of the spores was not approached, yet the spores were destroyed.

The results noted above upon the killing of mold spores in suspension has found commercial application in the destruction of like contaminants on the surface of bakery products. Recently a Los Angeles manufacturer of Boston Brown Bread appealed to us for help. His product was suffering a 40 per cent loss on the market from molding. Using the same frequency, and essentially the same equipment used in the experiments on the mold spores in suspension, we were able to solve the problem so that today the manufacturer is able to place upon the market a mold-free product.

We have found time to conduct a few experiments along the lines of "basic" research. Three problems that we have had in our minds are as follows:

(1) Does frequency have any function other than that of producing thermal effects? Our answer, based upon research cited seems to indicate that such is the case.

(2) What is the mechanism by which radio frequency effects its kill? Direct microscopic observation has been made of simple cells during the time that they were being subjected to radio frequencies. Cell lysis has been observed, however, the mechanism causing this lysis is as yet undetermined. We hope to augment these studies with electron microscope investigation and other cytological studies.

(3) Is there a specific effective radio frequency for each organism or group of organisms? Our preliminary experiments have indicated that there is a marked difference in the frequency required to kill bacteria as compared with those found effective against the molds. It appears then, that within limits, microorganisms have an optimal attack range of radio frequencies.

## Frequency Kill

By KENNETH A. SMITH  
Electronic Chemical Engineering Company  
Los Angeles

IT HAS been found that sarcoma was effectively killed at a frequency of 66-68 megacycles. However, a frequency of 135 megacycles was found to be entirely unsatisfactory. At frequencies of 7.5-15 mcs. *Samia Cecropia* and *Anosia Plexipus* were instantly killed. It was found that the adult larvae and pupae of *Pulodia Interpunctella* were killed at a frequency of 1,090,000 cycles per second, and it took a frequency up to 56 mcs. for mites and weevil commonly found in seeds.

To give you an example of frequency against killing time—results show in one instance at frequencies of 40 meters it took five minutes to kill while below 11 meters they were killed in 30 seconds. (*Aleurodus Farinae* Degoer, *Calaphagus Cadavarum* Schr., *Tyroglyphus Longior*, and *Cheruletus Erndetes*.) The exposure of five minutes lowered the percentage of germination considerably, but the 15-30 second exposure did not affect it. It has been concluded therefore that such insect infestation could be killed in a fraction of a second with sufficient field strength of electronic equipment.

Further studies have shown that lethal action for weevils begins where field strengths are at values of 2000-3000 volts/cm<sup>2</sup> and with field strength values below this indefinite exposure may result without any noticeable kill. It was further noted that if the voltage gradient was increased approximately 20-25% the lethal effect may change 200-300%. Percent of kill is also affected by the moisture content at frequencies below 56 mcs.

In medical examination, diphtheria, tetanus, and botulinus were inhibited without reaching lethal temperature with the field strength of 200-300 volts/cm<sup>2</sup>. Frequencies studied were in the range of one to four meters.

In discussing "frequency-kill," it seems to be borne out from past experience and experiments that the much discussed and theorized "point heat affect" in which selective heating may affect certain parts of the living organism or object so as to momentarily heat some portion to such a degree that death to the micro-organism ensues without raising the temperature of the surrounding mass in which the organism inhabits.

One of the many such examples that have been noted in basic laboratory study was B.COLI where 7.5 mcs. accelerated its growth and the resulting temperatures of the medium were kept at 17°-19°C. However, when the frequency was changed to 10 mcs., B.COLI were killed in the same range of temperature (17°-19°C). 27 mcs. to 45 mcs. had relative little effect. 10.4 meters affected the kill in two minutes while 5.6 meters inhibited after two minutes, but it took nearly five minutes for the killing. 50 and 100 meters had no effect whatsoever on the bacteria.

It is hoped that the facts presented herein will be a stimulus for further advancement in the art of high frequency dielectric heating, as well as a means of giving to industry some of the applications which have already been developed. Considerable experimentation is necessary to determine whether or not a particular problem can be solved. However, much work has been done in laboratories and large amounts of data are on hand to assist in this direction.

• Fred Sheffield, Pacific Gas & Electric Co., Oakland, takes a demonstration of the G.E. 15 kw. electric induction heater from Douglas C. Burke, General Electric engineer. Watching the demonstration are Dale Smith and James Bussey, also of the P.G.&E. Some 300 Bay Area engineers and industrialists viewed the electronics equipment at the exhibit.





• Steel Corporation's board, as they detrained in Utah to see what they had bought at Geneva. From left: Philip R. Clarke, Chicago banker; Nathan L. Miller, general counsel of the corporation and former governor of New York; Sewell Avery, Montgomery Ward's famous pugnacious president; Alexander C. Nagle, president, First National Bank of New York; James B. Black, only Western man on the board, president, Pacific Gas & Electric Co., San Francisco; Arthur M. Anderson, vice president J. P. Morgan and Company; W. A. Ross, president of steel corporation's subsidiary, Columbia Steel Company; Walther Mathesius (not board member), president, Geneva Steel Company; Benjamin F. Fairless, president, U. S. Steel Corporation; Enders M. Voorhees, chairman of finance committee; Cason J. Callaway, textile magnate; Irving S. Olds, chairman of the board; George A. Sloan, publisher, Southern Agriculturist; Robert C. Stanley, president, International Nickel Company; and William A. Irvin, director of Willys-Overland Motors.

## U. S. STEEL—Directors See Geneva

**F**OR the first time in history, United States Steel Corporation has bundled up its entire board of directors and brought them out West as a body to get them really acquainted with the West.

First they inspected their newly-acquired \$200,000,000 mill at Geneva, which Henry Kaiser says the government donated them at 20c on the dollar — but which neither he nor anyone else except U. S. Steel would pay cash for — and then looked over their Pittsburg, California, facilities, where \$25,000,000 is about to be spent in increasing facilities.

Next they held a board meeting in San Francisco for the first time, and went on to Los Angeles for a tour of the Torrance plant. President William A. Ross of Columbia Steel Company, the corporation's Pacific Coast subsidiary, was their guide and host and at each point they were welcomed by the very highest brass of the community.

President Fairless and Chairman Olds took the reporters on for press conferences, and out of these came some clarifications of the corporation's position in the West, as follows:

When they specified in their bid for Geneva that they would make it a basing point for all products manufactured there, they meant it would be the same as eastern basing points, if economically possible. They hoped so, but have not yet developed costs for Geneva.

Utah fabricators who got their first invoices recently for steel just made at Geneva got a rude shock. They discovered it was still priced at *Pittsburg plus*, despite the fact the mill is in their own back yard.

Fabricators will get a break from now on because as of Oct. 15, Geneva was established as a basing point applying to its sales of sheared steel plates now produced at Geneva.

Assembly costs at Geneva are higher than Birmingham, because all materials at the latter are within 25 miles of the mill, but Utah's ore has higher iron content. The deeper they go for coal in Utah, the better they expect the coal to be, thus largely overcoming the objections raised to Utah coal.

In seeking an \$8 a ton freight rate from Geneva to the Pacific Coast, they insist that they are not cutting down the \$12

prewar rate one-third, because no steel was ever shipped from Utah prewar. Thus \$12 is only a "paper" rate, and the railroads are not opening the door to a nation-wide rate adjustment by accepting the \$8 figure. As for the objection that rates are already as low as for comparable distances elsewhere, Mr. Fairless remarked that rates were built on volume, not distance. Present Coast steel prices are really based on an \$11 water rate.

Thus their expressed desire is to give the Pacific Coast relatively cheaper steel than heretofore, through a bona fide Geneva basing price and favorable freight rates.

Enough ore is in sight to supply Geneva for a normal life of 25 years, by which time the plant would be fully depreciated. Probably the ore will last much longer.

Within a matter of months, Geneva Steel Company will become part of Columbia. Important improvements are on the drawing board for Torrance now, but final decision on them has not been reached.

They expect satellite industries to grow up around Geneva, as has been the case elsewhere.



# Cooperation of Westerners In Congress on Regional Problems

**A**NOTHER example of the influence of senior members in Congress, in addition to what I have already pointed out in the three preceding issues of *Western Industry*, is of great interest and importance to the West.

This is found in the efforts made to co-ordinate the activities of the Western state delegations on major problems or on various Western projects. These have included such matters as the placing of contracts in labor shortage areas of the Pacific states during the war, the Mexican water treaty and the allocation of Pacific Ocean routes, to name only a few.

To obtain such joint action, the writer in 1943 enlisted the assistance of Representatives Clarence Lea and Harry Sheppard. With the help of Messrs. J. J. Underwood and W. B. D. Dodson, then Washington representatives, respectively, of the Seattle and Portland chambers of commerce, and who interested their state delegations in the program, there was formed a joint Tri-State Congressional Committee, representing Washington, Oregon, and California. Representative Sheppard has served as chairman since the committee's inception. This committee has been so effective in co-ordinating many Pacific Coast activities in Washington that

By W. G. HERRON

Mr. Herron, governmental and business consultant of Washington, D. C., has explained in great detail in the August, September and October issues of *Western Industry* the importance of retaining in office Western senior members of Congress, in order that the West's interests may be protected. Here he points out a specific example.

it voted to accept a request to expand its activity.

In addition, as a result of its marked success, during the past session a 7-State Committee was created which included not only the three states mentioned above, but also those of Idaho, Utah, Nevada, and Arizona. Of this Sheppard is also chairman.

Members of these groups are composed of senior members of either party from each state. In the opinion of the writer, from his experiences as consultant to both groups, the existence of these two committees forms one more reason why capable Western senior members should be retained in Congress.

After a period of operation of the 7-State Committee, it appears logical to consider a request to include Montana, Wyoming, Colorado, and New Mexico in an

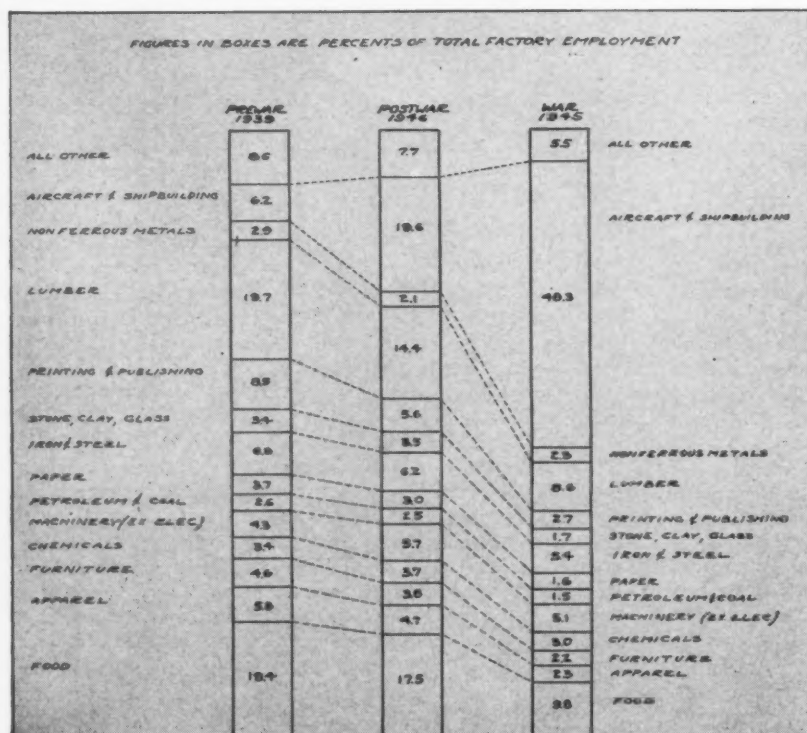
11-State Committee of senior members. This would provide a co-ordinating group in Congress to work directly with the Western States Council of Chamber of Commerce Secretaries, the Western division of the U. S. National Chamber of Commerce, the Committee on Economic Development and all other Western and state business associations.

This 11-State Committee would then form the co-ordinating group for real united action in Congress in behalf of the West. Annually in the West, during recess of Congress, there should be held a joint Western gathering of such organizations and the leading associations for Western agriculture, industry, mining, domestic and foreign trade, banking, transportation, other service industries and labor, with members of the 11-State Congressional Committee, to draft an annual federal governmental program for the West.

This should be followed by an annual conference in Washington, D. C., of representatives of these organizations meeting with the 11-State Congressional Committee, plus such other Congressmen as they wish to invite to make the Western governmental program effective in Congress. To accomplish this requires influence of many Western chairmen and senior members of both parties.

If Westerners cooperate together there is no reason why the West can't benefit greatly from cooperation right down the line on regional problems. The West needs it.

• Total factory employment goes places in shipbuilding and aircraft in postwar period.



## Pattern of Factory Employment In Twelfth Federal Reserve District

(Prepared by Research Departments of the 12th Federal Reserve Bank. Figures cover first quarter of a prewar and postwar year.)

Prewar pattern followed to considerable extent. About one out of every six employed persons in the district was engaged in manufacturing in April, 1940. The ratio for California, 16 per cent, increased to 34 per cent at the peak of war production activity in June, 1943, then fell back to 19 per cent in April, 1946. The same ratio probably applies to the entire district, Bank says.



## Training Clinic

By FRANK CUSHMAN

Chairman, Cushman Associates, Long Beach, Calif.

**B**BETTER human engineering is the key to better labor-management relations. As business has grown larger the line of communication between management and its workers has broken. Management has become more and more impersonal. The employee senses this impersonal factor and resents it. Men resent being processed by semi-automatic procedures and devices.

Management has often been stupid. It hasn't done a very good job in human relations. In order to re-establish its line of communication with its workers, it must train supervisors and foremen to do the job.

Supervisor and foremen are a part of management. The employee on the job who has been "bawled out" unjustly by a crabby foreman thinks that foreman expresses the whole company attitude.

Foremen, in turn, are convinced by their treatment that they have nothing to do with management but to carry out orders.

Top management's responsibility is to help its supervisors develop a sound philosophy of human engineering; to help them develop ideas about dealing with people that can be applied to their work. Most grievances can be resolved if foremen and supervisors know how.

But merely training lower supervision is not enough. Training should begin at the top, with the chairman of the board of directors, and go right down the line. Then the line of communication is restored. Management has that yet to learn.

By J. HERMAN MATTSON

Director of Industrial Relations  
Enterprise Engine & Foundry Co.  
San Francisco, Calif.

**T**HE supervisor is the link between management and the worker. The application of all plans of the industrial relations and personnel departments fall on the supervisor or a head of a department. He is a part of management.

Management's job is to train that supervisor in his five major responsibilities: 1) He should know the job or the work; 2) he should know the company's policies with regard to vacations, NLRB rulings, etc.; 3) he should know how to instruct employees on the job; 4) he should know how to lead people—in other words, have a knowledge of the basic principles of psychology; and 5) he should have the responsibility of proving his worth on the job.

He must get in on the production "know-how." It costs management \$50 to \$300 to break in a new worker because of the time involved. If this time can be shortened, the training the supervisor receives will be more than paid for.

If we could have 100 per cent technological control, we wouldn't need a fore-

## Management Tackles Production

The accompanying summaries are some of the high-lights of the sixteenth annual Personnel Management conference conducted by the California Personnel Management Association of San Francisco at Berkeley, California, October 15.

man on the job. As long as we need that foreman he must be recognized as a part of management. Sooner or later management will recognize him as such.

By MACK STOKER

Regional Supervisor, Trade & Industrial Education  
State Department of Education, Los Angeles

**F**OR the most part, management hopes that if it trains the foreman he won't join a union. Probably the foreman needs training as much as the rest of management. You should start training as high up as you can get.

It is my feeling that we have been featuring the foreman too much. Management should develop responsibility itself for good labor relations. Too many times management when it hires a new worker doesn't take him into the company. It just lets him in the gate.

But taking the foreman into management is not going to be enough. There is still a gap between management and the worker. Closing that gap is the responsibility of management. Until it does that job, it cannot expect more production from its workers.

By DURANT W. MOSELEY

California Council of Personnel Management

**M**ANAGEMENT should teach its supervisors as much about its plant as the shop steward knows. When that happens, employees will turn to their supervisors and foremen, rather than to their shop stewards.

Training provides the tools with which foremen can do a better job. If foremen don't know what their company policies are; if they are not backed up by top management in their decisions; and if their authority is poorly handled, they lose their value as leaders.

When workers lose morale because of poor foremen-labor relations, the company loses production.

You can't get more production unless the worker wants to give it to you. The company is going to have to convince the worker he is getting a square deal. A foreman, who himself is being treated fairly, can do it for you.

## What Labor Wants

By A. C. MCGRAW

Representative  
International Association of Machinists

**F**UNDAMENTALLY labor is concerned with two things: Increasing the purchasing power of both individuals and the mass, and lowering the cost of the things it buys.

For that reason labor is interested in increasing production on a national basis for, 1) it realizes it will mean more jobs for more people; 2) there will be more continuity of employment for the people now working; 3) co-operating in mass production means more goods to buy; 4) it is the best hope for competing with other countries; and 5) it will lower production costs and increase purchasing power.

Labor is not antagonistic to increasing production if that increase is not taken out of labor's back and at labor's expense. Labor will never increase production solely for management's benefit. Given the proper machines and processes with which to work, and given its share for working harder, labor will produce more.

Company policy should percolate to the lower levels of supervision. Poor supervision can harm and cause a breakdown in worker morale. Some 50 per cent of all wildcat strikes occur because of grievances which happen at some level of supervision. Supervisors must be trained, and the training of competent ones is management's responsibility.

*Without good supervision, proper machines and good labor relations, production cannot be increased. The worker has to want to give it to you.*

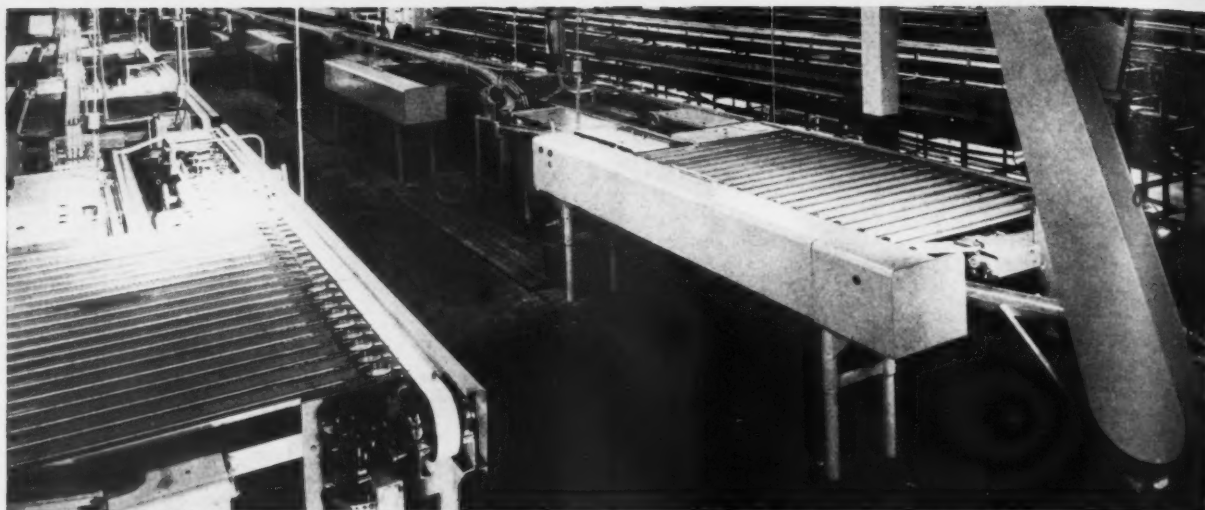
Sound labor relations from the labor viewpoint involve three things: 1) Joint meetings between supervisors and union stewards on new contracts; 2) the meaning and intent of the agreement clearly stated and understood; and 3) all interpretations of the agreement forwarded to each group in writing.

Such relations by promoting understanding tend to increase production.

Labor will never give up its right to strike as a last resort, but it will do everything possible to avoid strikes. Labor today realizes that there is a place for management and a place for labor. In order to survive, both sides must learn to work together.

To be successful, both must be willing to deal with each other and settle arguments on the basis of fact; there must be mutual confidence—honest actions are the best way to show sincerity of purpose.

If both sides will accept the mutual approach, the cat-and-dog fight between labor and management can be ended. All problems can be solved in an atmosphere of mutual respect if the will and the facts are present. With a greater knowledge and respect for each other, labor and management can get along.



• Cross conveyor with cover removed (above, left) shows weighing pans at right end ready to dump desired number of slices for filling.

## Astoria Invention Gives Both Exact Weight and Fixed Count

**A** MACHINE that has application to any materials handling problem of assembling units of varying weight in a container and getting an exact overall weight is coming into use in the fish canneries of the lower Columbia River region for handling tuna fillets.

This device permits grading fish fillets mechanically according to weight, and then automatically selecting a fixed number to fill the can without being either overweight or underweight. The next application appears likely to be the fruit canning industry, where pieces of varying sizes and weights now have to be com-

bined in one can to get a fixed count.

It sorts the material into 19 different sizes within  $3\frac{1}{2}$  grams difference, and then assembles any three units of a desired combined weight by a completely automatic process. The mechanism has capacity to make a total of 35 different selections.

Many hand operations have been eliminated in canneries where this selector is in use, so that even though the machine is now only built to run at a rate of 25 cans a minute, the saving in labor still leaves a good margin in cost. The inventor is E. H. Carruthers, formerly professor at

Cornell University, now a resident of Astoria, Oregon. The equipment is known as the **Fix-C-Data**.

In the former cannery method of canning fillets, the fish after being baked and cleaned, is first broken into four cigar-shaped segments which are laid on cutting boards and carried by a conveyor to the guillotine.

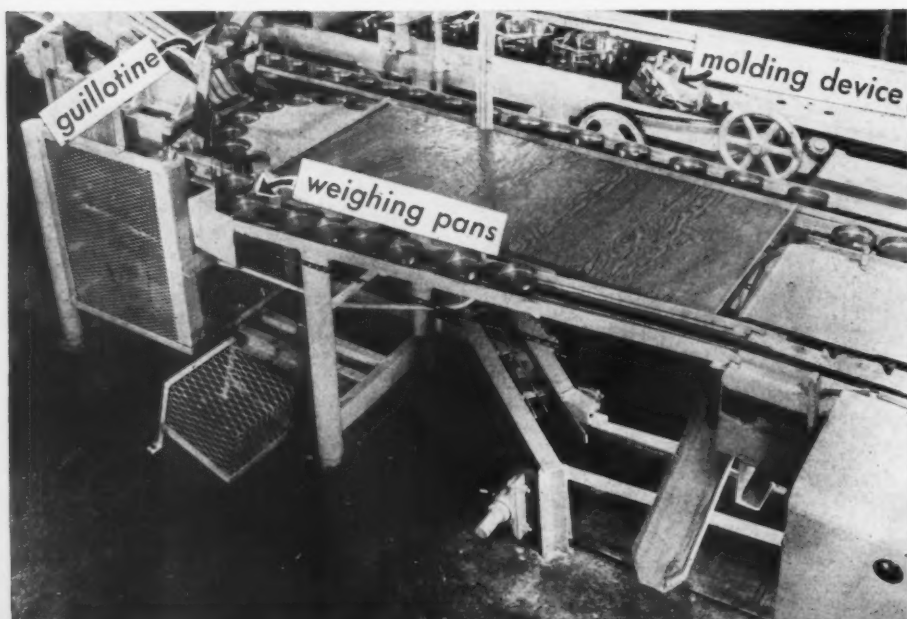
At the guillotine the segments are pushed under the blade, which slices to the desired thickness. After that the cans are filled by hand, an operation where the desired amount of fill must be estimated by eye prior to weighing and the only control can be to prevent underweight. Usually there are three pieces in the can, but it may be necessary to add or take away in order to complete the fill.

### New Type of Guillotine

With the new equipment the board is eliminated entirely, the segments traveling direct by conveyor to a new type guillotine invented by Carruthers. There the segment or "loin" is carried along in continuous forward motion while a thin knife cuts the desired slices. The cutting motion of the knife is controlled by a cam which provides proper cutting clearances as well as keeping the cutting plane in proper relation to the continuous movement of the loins.

The guillotine also kicks the slice into a weighing pan which is carried by conveyor into the weighing line. Here a trip scale weighs each pan load and immediately returns to zero for arrival of the next pan.

• Each slice cut off by the guillotine falls into a weighing pan and travels by conveyor to the weighing point beyond edge of picture, at right). After automatic segregation and regrouping, slices are fitted into cans by the molding device seen at the rear of picture.



This weighing operation also segregates the cuts by weight, the pans moving into a series of 19 cross channels, overweight at the head of the line, then the largest usable size and so on down to the smallest. When these channels are all filled up, the selector system of filling the cans is ready to operate.

By a series of studs protruding from a cylinder a contact is established which opens simultaneously any three gates that will supply three cuts making up the total combined weight desired. This is exact within an eighth of an ounce over or under.

A mechanical device for molding the fillets into the size and shape needed to fill the can is part of the equipment now used in the fish canneries. It would not be necessary in the case of peaches, pears or other material which does not need molding when being filled.

This device consists of a chuck into which the cuts are first deposited as they drop from the channel gates. As the chuck rotates its torque motion slowly closes to the same size as the interior diameter of the can, molding the material without breakage into form at the same time. When the operation is completed, a plunger in the center of the chuck pushes the fish into the can, which meanwhile has been brought by means of a rotary conveyor into filling position.

The selector was first used at the Columbia River Packers Association plant at Astoria, and installed later in the Van Camp plant at Astoria. Now the new Sebastian Stuart cannery in the same city has been built around set-ups of this machine in the preparation and filling lines.

### Monsanto Plans Western Phosphorus Plant

Three officials of the Monsanto Chemical Co. of St. Louis, have been studying phosphate and gilsonite deposits in the states of Idaho, Montana, and Utah, with a view to establishing a phosphorus production plant in the inland West.

R. R. Cole, vice-president and general manager of the company; R. G. Klugh, assistant general manager, and Gaston DuBois, retired vice-president, all of St. Louis, inspected sites in the three states, including the Humphrey phosphate deposits near Vernal, deposits near Randolph, Rich County, Utah, 100 miles north of Salt Lake, and potash developments on Salt Flats west of Salt Lake.

Monsanto would begin erection of a plant as soon as possible if a satisfactory site could be found, Mr. Cole said. Such a plant would reduce phosphates to phosphorus which is used on the West Coast in production of soap, water softener, and other products, and would produce some 30,000 tons of elemental phosphorus a year.

## Licking the Problem Of Narrow Alleys

**TO MEET** the problem of receiving heavy shipments in an alley where a city ordinance forbade the use of a permanent crane, Adams-Campbell Co. of Los Angeles had designed for them a movable cantilever crane capable of lifting a two-ton load from the center of a motor truck.

The movable arm of the cantilever consists of a 10-inch I beam, 20 feet long with an 8-inch channel on the top flange for stiffener. The unit is carried by two heavy-duty plain trollers running on the bottom flange of a 12-inch I beam securely anchored to the building and parallel to the cantilever crane.

On the crane is a two-ton capacity bearing spur geared chain hoist and two-ton ball bearing trolley. When the truck un-

loading job is finished, the cantilever arm is easily pushed into the building and the sliding doors closed.

The installation has saved manual labor in difficult unloading work, cut down handling time and reduced the danger of accidents. It was designed by H. R. Butler of the Philadelphia Chain Block & Mfg. Co. distributing organization.

Truck traffic can be additionally speeded in the narrow alley if the loading dock or entrance is laid out on an angle of approximately 25 degrees. Not only is it easier for truck drivers to back in, thus saving time, but it gives sufficient clearance in the alley so that normal flow of traffic there is not hindered. More trucks can be accommodated in a day.

• Handling heavy loads in an alley like this is ordinarily a truckman's nightmare. This movable crane rolls out from inside the building and does all the heavy lifting.





# War Surplus Purchases Made Easier for Western Buyers

**M**ILLIONS of dollars worth of hard-to-get production machinery and machine tools are on sale at regional offices of the War Assets Administration throughout the West. And according to J. W. Bryson, director of the industrial equipment division of WAA in San Francisco, never before have such bargains in good machinery been offered on such liberal credit terms.

Some manufacturers, machine shop owners and industrialists are profiting from this opportunity but many potential buyers have overlooked the machinery they want in war surplus because, apparently, they didn't know how to go about buying it, or didn't believe purchase of surplus machines would be profitable.

Those who take time to investigate discover that War Assets Administration has machinery they can't get anywhere else—machinery which has been used, it is true, but which generally is in good condition. Whatever the condition of a machine, it is stated in the WAA listing. If it needs repairs before it can be operated, the fact is emphasized to the prospective buyer, who always is urged to inspect the machine himself, so he will know exactly what he is getting.

## Credit Facilities

Buying has been made increasingly easy. Credit is available, after the customary investigation, to responsible individuals and firms. In some cases machinery is sold for as little down payment as 15 per cent, with five years to pay the balance . . . extremely favorable credit terms.

Special services such as the "Sales Information Service" in San Francisco are being established to assist prospective purchasers. In San Francisco all a buyer has to do to obtain sales information about any type of commodity is to phone KLondike 2-2300 and ask for extension 154. Sales information service will tell him whether what he wants is on sale, what else he can buy, the price and other details.

In nearly every Western region there are machine tools on inventory. San Francisco region, for example, where sales are just reaching a peak, has current inventories of machines, machine tools and electrical equipment which cost the government close to \$10,000,000.

What's included? Well, there are chain hoists, grinders, winches and steam boilers. There are overhead cranes, boring mills, drill presses of various sizes, milling machines and thread millers, engine parts, air ejectors, pressure gauges, circle aimers, water pumps and air compressors.

The industrial equipment division also has flat cars and freight cars of standard gauge which were used in larger plants, and such things as a \$68,839.80 heavy duty shaft turning lathe, an \$1,100 hobbing machine, rolls, shear machines and hundreds of other production equipment units.

There are scores of electric welding machines for sale, used at various war plants, and great quantities of welding rods, all priced to sell.

Most of the machinery is on sale at fixed prices, the same to all buyers. Nearly all the machines are of standard manufacture and are priced under the "Clayton formula" which sets a percentage discount for depreciation, according to the length of time used.

Do buyers get real service from officials of the War Assets Administration? Well, Phillip R. Kennedy and Kyle Van Nest, who operate the Precision Machine Products Company in Alameda, California, answer that question with an emphatic "Yes"! Mr. Kennedy goes further and says: "If it hadn't been for officials of the War Assets Administration we would have lost our contract to make parts for roller skates."

Here's the story. Kennedy and Van Nest were using two single spindle machines

which were turning out the work too slowly. With the Christmas trade in the offing and merchants already laying in their supplies of roller skates, for the first time since the war ended, there was need for speed. They had to get an automatic screw machine and get it quickly, or their contract would have to be forfeited.

They called upon the WAA office. They had the machine the Precision company owners wanted but some special attachments needed weren't on the machine. An official found the special attachments on machines in the Los Angeles area and arranged to borrow them until the factory could supply Kennedy and Van Nest. The contract was saved and Kennedy and Van Nest are still making the roller skate parts.

This is one instance; a score of similar ones could be cited.

## Dealers Provide Service

Not all selling is done directly by the War Assets Administration. To aid buyers, an approved list of machine tool dealers has been established with the function of helping to sell surplus for the government and their names may be obtained from the nearest regional WAA office.

These dealers will buy machine tools for any firm or individual, without cost to the purchaser. The dealers receive a commission of 12½ per cent from the government, which is NOT added to the price of the machine.

Under this system the dealers, with inventories in all WAA regions throughout the nation available to them, have disposed of many special machines for which it is difficult to find a buyer, and at the same time have served industry by locating machines which could not be found elsewhere than in WAA stocks.

As the priorities actually work out in connection with sale of machine tools, there is little exercise of their preferred position by federal or other governmental units. Certified veterans buy a few machines to establish a new business, or to reestablish one they gave up when they entered service, and are given every aid by WAA in their efforts. But the very nature of the surplus marks it as primarily the type which will be purchased by commercial and industrial users, whether they be veterans or non-veterans.

In the case of machine tools the priority buying period is not long in comparison with the amount and type of merchandise involved. You don't run down to the corner hardware store to pick up a \$16,000 overhead crane!

## Western Regional Office Addresses

728 Fifteenth St.  
Denver 2, Colo.  
Phone: Keystone 4151

30 Van Ness Ave.  
San Francisco 2, Calif.  
Phone: Underhill 2425

1409 Second Ave.  
Seattle 1, Wash.  
Phone: Maine 2782

Power Block  
Helena, Montana  
Phone: 1224

222 South West Temple  
Salt Lake City 1, Utah  
Phone: 5-7503

500 Welch Building  
Spokane, Washington  
Phone: R-8051

Swan Island  
P.O. Box 4062  
Portland 8, Oregon  
Phone: Broadway 7741

Mode O'Day Bldg.  
Hill Street and Washington Blvd.  
Los Angeles, California  
Phone: RI. 2311



# HEAT LOSS ESTIMATE SHEET

DESCRIPTION	SURVEY DATA					CALCULATED DATA									
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Piping	8" diam.	100				324			1640		164,000	164,000	12"	\$1,900	142,100
Flanges & Fittings Etc.	8" diam. piping		10	10		87	685		39,045		39,045		2"	3,304	36,739
4 Drum Heads	81" diam.					340	100	790	79,800		79,800		2"	8,400	79,400
											282,845		TOTAL	282,239	\$708

## INSTRUCTIONS

For use of  
Heat Loss Estimate Sheet

### For Surface: 4 Drum Heads

Following the principles of Formula A—  
81" dia. x 100 sq. ft. = 4,000 Btu insulated heat loss for 100 sq. ft. of drum head area per hr.  
Total Savings in Btu per hr. (Col. N) = 79,800  
—4,000 = 75,800 Btu.

Following the principles of Formula B—  
75,800 Btu x 1.000 Btu = \$1.000 of coal = \$1.000  
1.000 Btu = 1.000 Btu = 1.000 Btu = 1.000 Btu  
saved per year

### FORMULA FOR COMPUTATION ON HEAT LOSS ESTIMATE SHEET

Formula A:  $\text{Btu loss} = \frac{\text{Area} \times \text{Temp. Diff.} \times \text{K-factor}}{\text{Insulation Thickness}}$   
K-factor = 0.17 for 1" of 85% magnesia insulation.  
Temp. Diff. = 324° F. (324° F. - 0° F.)  
Area = 4,000 sq. ft.  
Insulation Thickness = 1" = 1/12 ft.  
Btu loss =  $\frac{4,000 \times 324 \times 0.17}{1/12} = 2,736,000$  Btu per hr.

Formula B:  $\text{Savings} = \frac{\text{Area} \times \text{Temp. Diff.} \times \text{K-factor}}{\text{Insulation Thickness}}$   
K-factor = 0.17 for 1" of 85% magnesia insulation.  
Temp. Diff. = 324° F. (324° F. - 0° F.)  
Area = 4,000 sq. ft.  
Insulation Thickness = 1" = 1/12 ft.  
Savings =  $\frac{4,000 \times 324 \times 0.17}{1/12} = 2,736,000$  Btu per hr.

### TABLE I

Recommended Thicknesses For Pipe Covering

Steam Pressure lb. per sq. in.	Temperature °F.	Thickness of Insulation inches	Thickness of Insulation feet
Hot Water	100 to 250	1	1
0 to 25 lb.	250 to 300	1	1
25 to 100 lb.	300 to 350	1	1
100 to 250 lb.	350 to 400	1 1/2	1 1/2
Low Superheat	400 to 500	2	2
Superheat	500 to 600	2 1/2	2 1/2
High Superheat	600 to 700	3	3
and	700 to 800	3 1/2	3 1/2
Hot Oil Lower	800 to 1000	3	3

Note: For surface areas, divide thickness by 12.

### TABLE II

Recommended Thicknesses For Flat Surfaces

Operating Temperature °F.	Thickness inches
100 to 200	1
200 to 300	1 1/2
300 to 400	2
400 to 500	2 1/2
500 to 600	3

### COLUMN A:

Use this column to collect size or dimensions of equipment for subsequent calculation of heat loss.

### COLUMN B:

Having ascertained the pipe size, the length of the pipe in feet is entered in this column. Later columns in this sheet will give the Btu loss per hour per lineal foot.

### COLUMNS C and D:

Used graphs in arriving at piping includes the consideration of heat loss from flanges and fittings on a flat surface basis. Flanges are listed separately from flanges on the Heat Loss Estimate Sheet to cover all covered fittings without charge. For simple calculation consider all fittings as Tees. Size of the piping determines the size of the flanges and fittings. Therefore the number of each in this column is sufficient.

### COLUMN E:

Temperature on the bare face of the equipment in degrees F.

### COLUMNS J and K:

Refer to "Example" for computations.

Piping: 100 line ft. x 1,640 Btu per line ft. per hr. = 164,000 Btu loss per hr.

Flanges and Fittings: 17 on ft. x 483 Btu per sq. ft. per hr. = 8,211 Btu loss per hr.

Drum Heads: Determine in same manner as for Flanges and Fittings.

Column K is included as a convenience in accumulating total heat loss.

### COLUMN L:

To secure the insulated heat loss, thickness of insulation must be known. In Tables I and II find the recommended thickness corresponding to the temperature at which the equipment is operating.

### COLUMN M:

Refer to Formula A on this page to determine total Btu loss from bare face. See Example.

## Simple Heat Loss Estimate System for Western Plants

PLANTS in the West now have available to them a simple tabular form for estimating dollar savings in fuel consumption through the insulation of frequently uninsulated power plants and hot-fluid piping and vessels.

It has been prepared for them by the Industrial Mineral Wool Institute of which the U. S. Rock Wool Company of Salt Lake City is a member. The "Heat Estimate Sheet," as it is called, is reproduced herewith in part.

Complete instructions on the form (not shown in illustration) reduce the task of the user to counting, measuring, filling in data, and computing the simple formula, which gives a result in potential dollar savings. The example shown herewith represents the application of the heat loss estimate to a hypothetical power unit and its pipes and fittings.

The first column provides for listing of the exposed surfaces. The next five columns permit the accumulation of basic data about the listed surfaces.

After listing the various areas of exposed surface and the basic data concerning them in columns A to E inclusive, the user is ready for his calculations. The sample basic data shows 100 linear feet of 8-inch diameter pipe with a surface temperature of 324° F. Reference to Kent,

pages 3-64, table 7, shows that under these conditions, one foot of the pipe will lose 1640 B.T.U.'s per hour. This is listed in Column H, multiplied by 100 for length of pipe, to give 164,000 B.T.U.'s lost, and listed under Column J. This figure is repeated in Column K on the same line and represents the total bare surface heat loss from piping.

Flanges and fittings are calculated separately, using the basic data in columns A to E and reference data from Table 5, page 516 in the "Heating, Ventilating, Air-Conditioning Guide," 1946 edition.

For convenience in calculation, the area of Tees is chosen to represent any fitting and the area of flanges (taken from the same table) is subtracted from the area of Tees of the same size to give the bare surface of the fitting. This is then multiplied by the number of fittings to give a figure which, in this case, is about 33 square feet.

To this is added the area of flanges from the same sources; in this case about 24 square feet, to give a total of 57 square feet in Column F. By referring to a surface temperature-heat loss graph printed on the reverse side of the estimate sheet, a rate of 685 B.T.U.'s per hour per square foot is found.

Multiplication of data in Columns F and G gives a total surface loss of 39,045

B.T.U.'s per hour<sup>1</sup> for these fittings and flanges. This again is recorded in Column K.

The same process is carried out with respect to the drum heads to give a total of 79,800 B.T.U.'s lost per hour. This combines with the other data in Column K to give a grand total of more than 280,000 B.T.U.'s lost per hour.

A second table in the heat loss estimate sheet gives recommended sizes of mineral wool insulation for the protection of equipment of various sizes at varying temperatures. With this figure selected, it is necessary only to refer to the graph showing heat losses with insulation and multiply by the linear pipe or square feet of fittings (Columns B and F) to get the figures in Column M. These are subtracted from corresponding figures in Column K to give Column N, showing the savings in heat loss to be had by the application of mineral wool insulation to bare surfaces.

Another simple formula converts these figures into dollars of savings for coal, oil, or gas. Experience shows that the average savings run in excess of 87 per cent, and that the cost of insulation is defrayed through savings in periods of time varying from less than one month to as much as 15 months, depending upon the nature of the exposure and the type of fuel used.

# Coast FEPC Drives Linked to Washington

**W**ASHINGTON, D. C.—Legislation, either federal or state, concerning racial or religious factors in the relation of employers and workers, obviously is extremely important to the Pacific Coast, in fact to the whole Pacific area of the United States.

We have repeatedly been told here in the Capital that the Negro population of San Francisco has increased more than 300 per cent during the industrial period of the war, and that similar additions have been recorded in the human expansion of Seattle, Portland, Los Angeles, and other centers of the Coast. The effort to enact a law making the FEPC a permanent agency of the federal government was one of the most bitterly fought issues in the recent sessions of Congress, and failed by a margin that is much narrower than the country generally realizes.

The subject is now of immediate interest because the November elections are imminent; and, because an active campaign is gathering momentum to revive the drive to establish a permanent Fair Employment Practices Commission legislatively during the sessions of the next Congress, which takes up its work in January.

Many reports also are reaching here that those behind the drive are striving to secure parallel legislation in many states, particularly in the States of the Pacific Slope. Seven states now have FEPC laws or equivalent ordinances; the object is to secure them in at least 30 to 40 states. It is patent that the men and women who are elected to Congress in November will determine what will be done about the prospective FEPC legislation.

## Who's Back of FEPC Drive

The CIO and the PAC are ardently in favor of FEPC legislation. The AFL has not been regarded as wholly friendly to FEPC. The organizations which have most vigorously supported the 15 or 16 bills introduced in the past Congress are the Pan American Union, (on behalf of citizens of Mexican and other Spanish-American antecedents) as follows:

Mayors' Inter-Racial Conference, the National Council for permanent FEPC, Alpha Kappa Alpha Sorority, Federal Council of the Churches of Christ in America, War Shipping Administration, War Department, Maritime Commission, National Women's Trade Union League of America, Civil Service Commission, the Archbishop of the Catholic Diocese of San Antonio, Tex., the *Vallejo (Calif.) Committee for Interracial Affairs*, the Committee for Congested Production Areas, Fraternal Council of Negro Churches in America, National Council of Jewish Women, National Association of Advancement of Colored People, American Jewish Congress, American Zionist Emergency Committee, Catholic Interracial Council, American Friends Service Committee.

By ARNOLD KRUCKMAN

American Council on Race Relations, Kansas City Urban League, Y.W.C.A., National Urban League, National Federation for Constitutional Liberties, New England Congress for Equal Opportunities, American Unitarian Association, Council for Social Action of the Congregational Christian Churches; National Catholic Rural Life Conference, Central Conference of American Rabbis, National Farmers Union, National Maritime Union, United Council of Church Women, *First Presbyterian Church of Portland, Oregon*; *Church Federation of Los Angeles*, National Negro Congress, the Social Party, National Association of Building Owners and Managers, National Federation of Settlements, the Archbishopric of the Catholic Church Diocese of Chicago, Farmers Educational and Cooperative Union, and other Negro and Jewish organizations, both national and local.

## Most Complaints Involve Negroes

The list, taken from only one volume of hearings before the House Committee on Labor, is impressive and makes one ponder. Negroes, Poles, Irish, Jews, Mexicans, Spanish-Americans, Puerto Ricans, Italians, Catholics, were specifically mentioned during the hearings as actual and potential victims of discrimination; but it became very clear the reason for the rush to introduce bills—15 or 16—chiefly was the effort to respond to the demand of the Negroes for the FEPC law. It was brought out that 10 per cent of the total population of the United States are Negroes, and that of all the complaints processed by the temporary FEPC, over 80 per cent involved Negroes, but only 10 per cent came from the Deep South. It was very obvious the Negroes have been made markedly conscious of their power as the largest minority group.

It was reported that there are 2,500,000 Spanish-Americans who vote in the United States, or are potential voters. The American Indian was mentioned as coming within the scope of the purpose, but apparently his complaints had been so rare that no one could supply information.

A survey of 5,000 plants, apparently mostly in the West, is said to have revealed that 56.1 per cent of the employers would not hire Negroes. Malcolm Ross, head of the vanished FEPC, admitted that 50 strikes during one year of the war were reported, on authority of the War Department, as caused by resistance of white workers to break-down of segregation measures in relation to colored workers.

It is interesting to contemplate that what it is proposed to do by means of the FEPC law is the exact reverse of what the Nazis attempted to accomplish in their Fascist state. The Nazis, according to Rabbi Stephen S. Wise's testimony, attempted to eliminate Jews and others by permitting

One of the best-informed writers at the Nation's Capital, Arnold Kruckman, presents each month authoritative comments on political developments and their practical application to industry of the West. Any reader who wishes additional information may write to him directly, using business letterhead, at 1120 Vermont Avenue, N.W., Washington, D.C. Inquiries will be answered free of charge. You also are invited to contact him personally in Washington. Copies of pending congressional bills may also be obtained free of charge.

only limited percentages to remain in the professions, and in various employment, until the hardships grew so great that they gradually left the country, and the non-Jewish Germans moved into their places.

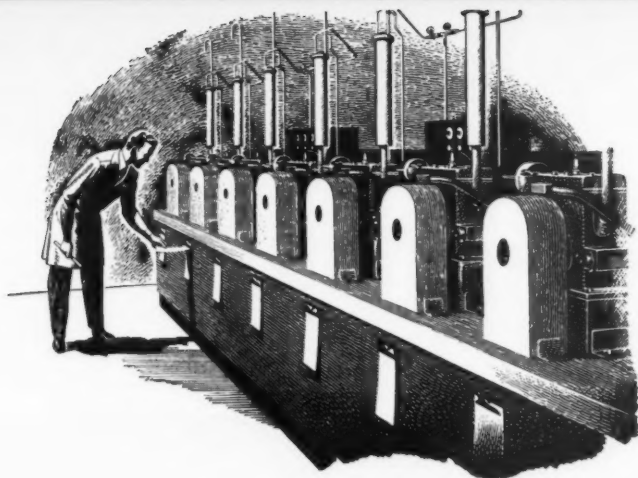
The proponents of the FEPC, on the other hand, aim at forcing employers to hire all racial, religious, and national minorities, regardless of the wish of the employer, or the need of those in the majority categories who do not claim the umbrella of the minority protection.

It is virtually admitted by the proponents as well as the opponents that the function of the FEPC would make impossible any discretion in hiring men or women in a business employing over five persons. In effect the employer would be compelled to engage a Negro, or any other member of a minority group, if the minority candidate for the job complains to the FEPC there has been discrimination in employment of the person whose job he wants, and if the FEPC supports the claim of the minority applicant.

## Right to Hire No Longer Employer's

Obviously, the very threat of such proceeding would generally impel the employer to submit to the minority pressure in order to avoid the expense of defending a costly and protracted action. Firms found in violation would be eliminated from all government work and contracts. It would even be a violation for a newspaper to publish an advertisement calling for a person of a specific race or religion.

You may get a foretaste of what the permanent FEPC bureaucracy will be by what the temporary FEPC was. It had 68 Negro employees and 45 whites, and whites holding most of the lower paid jobs, even though the white employees generally came from other minority racial and religious groups. The 11 regional headquarters were under the direction of five Negro heads and six white directors. The salaries ran from \$1440 to \$10,000, the latter being the pay of Malcolm Ross, the



The ability of motor oils to resist oxidation and prevent bearing corrosion under today's new stresses is measured in Shell's Research laboratories with "Screening Engines." If the oils pass muster here, they are further tested under on-the-job conditions in standard-make engines.

# You need more "powerful" Motor Oil with today's more powerful gasoline



**S**INCE more powerful gasolines have become available, most engines have been asked to deliver faster acceleration, higher rpm's, and longer continuous operation.

That means added stress on Motor Oil. So we suggest you use new Golden Shell Motor Oil . . . a match in "power" for today's more powerful gasolines. Golden Shell is fortified with an oxidation inhibitor, added during manufacture, to give it resistance to lacquer and sludge formation. This means it will stay full bodied, free flowing and more efficient from one oil drain to the next.

You will agree that this added protection for your engines is a good idea. It is yours for the asking. Just say Golden Shell, please, the next time you're buying Motor Oil.

chairman, who gave very capable service.

You may not agree with Ross' ultra social philosophy, but you must respect his sincerity and equable temper. Mr. Ross remained on the job long after all the payroll patriots of FEPC had gone to greener pastures. For a considerable period he apparently carried on at his own expense, and he still is fighting with all his power to secure the permanent revival of FEPC. Ross was the second head of FEPC.

The Roman Catholic Bishop of Grand Rapids, Michigan, Francis J. Haas, was the first. He was a Monsignor in the Church hierarchy when he was the top brass of FEPC. His elevation to a bishopric was

not consistent with public office. But he still is an active participant in many phases of the FEPC work.

FEPC stemmed out of the war at the time when the Japanese and the Germans accused us of holding out on our colored citizens. The slogan of its friends is that they seek to give minorities, colored and otherwise, "equality of opportunity," not social equality.

In essence they contend the employer has no right to choose his employees. They maintain that concentrated national supervision is necessary, and they deny that local option, by states, would work. If you have convictions about the subject, discuss

them with the men or women who are seeking your vote to come to Congress, and find out what they may do about the proposed law when it is introduced again. Your interests as a business man are deeply involved.

The past performances of Congress on the issue strikingly illustrate why the business people throughout the nation feel so cynical about Congress. This reporter literally did not find anywhere on his 12,000 miles of rambling around continental United States any business man or woman who had either respect or faith in the Congress speaking collectively.

They generally felt that the eager affirmative actions of the various committees, plus the 15 or 16 bills, indicated that the members of Congress were more eager to put themselves in a vote-getting light with the minorities than to make laws in keeping with the needs of business. They felt, moreover, that the manner in which the same members avoided the final showdown vote on the issue, by slick and devious parliamentary tricks, left the business community little basis for hope or encouragement.

The question this reporter most frequently was asked was how could the citizens stop the flow of funds which Congress uses to defy the ill of the unorganized majority in order to curry favor with the organized minorities. It seems quite probable if the business people could launch a tax strike without endangering their businesses to seizure by government there might be a tax strike.

On the Pacific Coast and throughout the Pacific Slope, as well as in all other parts of the country, the business folk have little faith in the reports from government agencies. It is startling to learn they question most government figures, and distrust many government field investigators.

Never has this reporter in half a century encountered such complete scepticism about the general function of government machinery, and so much alienation from the bureaucracy.

There is every indication that the coming November elections will be decided more by evaluation of persons than by political labels and slogans. The danger is that the impatience with the people who hold office may cause such overwhelming desire to get rid of those who are in, that many competent individuals will be swept out by the tidal wave, and replaced by incompetents, hoping a change will be a cure.

It should interest small business economy on the Coast that DOJ—Capital argot for Department of Justice—is out actively to break the hold of the few big concerns who make most of the sales to federal, state, county, and municipal governments. DOJ holds when specifications are properly written, smaller business easily could get much of the trade. Watch for the injunction suits.



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# ECONOMY STEEL COMPANY

STRUCTURAL STEEL

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## TRAILERS STOCK 50 RETAIL STORES AND BIG OAKLAND MAIL-ORDER HOUSE

**I**N California, Montgomery Ward's fifty retail stores, scattered throughout the State, and their huge mail-order house at Oakland, are kept well stocked by a fleet of Fruehauf Trailers.

### DELIVERIES MUST BE CONSTANT!

Fast, direct deliveries by Trailers are essential to keep Ward's display floors and counters well filled. Dependable vehicles for this work are a "must". That's why Blankenship Motors, professional haulers, chose Fruehauf equipment for this exacting delivery service.

### 27 TRAILERS KEEP GOODS ROLLING!

The Blankenship fleet includes twenty seven Fruehauf drop-frame Aerovan Semi-Trailers. This firm will tell you these drop-frame units have lower center of gravity and increased road stability in addition to providing greater inside capacity for handling bulky loads.

### LOW MAINTENANCE FOR FLEET!

These Aerovans are of integral-frame construction — one-piece welded units — affording unusual strength though light in weight. The fact that each of these Fruehaufs rolls up 80,000 miles per year, usually fully loaded, with maintenance costs practically negligible, is further evidence of their durability and good engineering. As the picture illustrates, converter gears are employed by this firm to enable Semi-Trailers to function as full Trailers when operated as "trains".

Blankenship also points to Fruehauf Factory Branch Service facilities as another reason for standardizing on Fruehauf Trailers.

If you'd like to know of the economies made possible to other firms just like this—call in a Fruehauf man. You aren't obligated in any way.

World's Largest Builders of Truck-Trailers

## FRUEHAUF TRAILER COMPANY

Western Manufacturing Plant—Los Angeles

SALES AND SERVICE BRANCHES—LOS ANGELES • SAN FRANCISCO • PORTLAND • SEATTLE • EL PASO • PHOENIX  
SAN DIEGO • FRESNO • SPOKANE • BILLINGS • SALT LAKE CITY • DENVER



# WESTERNERS AT WORK...

## California

### Engineers

Carl H. Kadie, Jr., recently discharged as lt. comdr. in Navy, named district engineer in charge of Central Valley Project's newly created Delta District, including the area between Knight's Landing in the Sacramento Valley and the Hetch Hetchy aqueduct in the San Joaquin Valley.

H. F. Lynn of San Francisco appointed manager of operations of Western Knapp Engineering Co. in all areas except New York office territory.

### In the Air

Alvin P. Adams, formerly pres. of Western Air Lines, v.p. of Fairchild Engine & Airplane Corp., and v.p. of National Aviation Corp., will take an active interest in development program of California Eastern Airways, and becomes director when Mercury Transport Corp. merged with California Eastern. Company flies contract freight transcontinentally.



• Harry A. Sutton (left) and J. O. Yeasting have just been appointed assistants to aircraft presidents of Ryan Aeronautical and Boeing Aircraft, respectively.

L. W. Tixier, member of industrial and public relations staff, named manager of industrial relations for Douglas Aircraft Santa Monica plant, succeeding J. L. Mayer, who transfers to gen. office of industrial and public relations division. . . .

Harry A. Sutton, director of engineering for Consolidated-Vultee Aircraft Corp.'s 12 divisions, switches to Ryan Aeronautical Co. where he will be asst. to president and engineering advisor. His job will include liaison with Army and Navy on current aircraft contracts and development work for military services.

In continuing shifts at Consolidated Vultee Aircraft Corp., J. M. Gwinn Jr., chief engineer of personal aircraft and director of tooling during war, resigns from Convair. He will retain headquarters in San Diego where he plans to study private-owner airplane field. . . .

John P. Mifflin succeeds as v.p. and gen. mgr. of Western Skyways when Floyd Johnson resigned to become president of Northwest Aviation Sales.

Arthur F. Kelley apptd. gen. traffic mgr. for Western Air Lines.

Neil O'Donnell, gen. mgr. Idaho-Maryland Mines Corp., Grass Valley, elected exec. v.p. of corporation.

Elmer Basey appointed gen. traffic mgr. of Pacific Air Lines.

### Engines at Menasco?

Henry C. Hill named asst. director of Power Plant Engineering for Menasco Mfg. Co., Burbank. He resigned as head of Special Propulsion division of Wright Aeronautical Co. at Paterson, N. J., to accept Menasco post. Coming with him from Wright is Louis J. de Roze, formerly senior project engineer at Wright, who will be production liaison engineer at Menasco on gas turbine engines. Hill will assist N. C. Price, director of Power Plant Engineering, on expanding programs of gas turbine and jet engine work.

D. B. Acker, many years a production executive of Fisher Body Division, General Motors Corp., elected v.p. in charge of operations of Menasco Co., an advancement from post of gen. mgr. of operations at Menasco. He succeeds Cyril Chappellet, v.p. of Lockheed, as a director of the company. Chappellet resigned because of pressure of other business.

### Labor Aides

Secretary of Labor Schwellenbach appointed Nathan Feinsinger, University of Wisconsin law professor, as special mediator in the dispute between West Coast operators and Harry Bridges' CIO longshoremen's union. He will be Schwellenbach's personal representative at the contract negotiations between the Waterfront Employers Association and Bridges' International Longshoremen's and Warehousemen's Union. Schwellenbach also assigned Conciliation Commissioner Stanley White of San Francisco as a special mediator to help settle the strike by 25,000 Hawaiian sugar workers. White will assist Conciliator Fred E. Irwin.

Dick S. Heffern of Altadena has joined Employers Industrial Relations Council of Santa Ana, Calif., as executive secretary and labor relations consultant—Heffern has been a specialist in labor problems for many years, serving in that capacity with the Shell Oil, War Labor Board and private concerns. James M. Anderson, Santa Ana investment counselor, was named to post of pres. of council succeeding the late Robert N. Hockaday. Other officers, B. W. Robinson, vice-pres., and John Vernon, sec-treas., continue in same posts.

### Researchers

Russell J. Love, formerly chief engineer, Southwest Welding & Mfg. Co., Alhambra, appointed exec. secretary of Pressure Vessel Research Committee of the Welding Research Council. Love has moved from Calif. to New York to take charge of the new office. The committee has underway research in fields of materials, design, fabrication and inspection and testing.



Dr. W. F. Talbot

Melamine resins (plastics) used for moldings, castings and similar industrial purposes.

Dr. William F. Talbot, pres. and technical director of Fine Chemicals Division of Sun Chemical Corp., will be director of the new Stanford Research Institute, which will delve into research problems of industry. Pure and applied research in physical, biological and social sciences, engineering and mechanical arts are within its scope. Dr. Talbot is inventor of

P. O. Berkhoel will direct Long Beach unit of West Coast Terminals, Inc., which began operations early in October.

### Metals Men

Frederick A. Purdy will head operations of the new Ryerson & Son steel plant in Los Angeles. Purdy will be mgr., Theodore L. Kishbaugh will be asst. plant mgr.—he was formerly with Earle M. Jorgensen Co.; Thomas E. Williams, warehouse supt. and Vernon D. Rogers, office and credit mgr. Members of the sales staff are George W. Gilliland, John Fennie, Harold Christian, Richard DeLand, Merle Anderson, Milford Tiner and Ernest Lindgren.

Robert B. Coons, senior partner of Coons, Milton & Co., San Francisco, will join American Potash & Chemical Corp., as assistant to the executive vice president.

John Nauman, San Francisco financier, becomes v.p. of Kingwell Bros., Ltd., and became active in the national company Oct. 15. Company is one of largest manufacturers of bronze bearings on West Coast. . . .

D. E. Golden, formerly gen. mgr. and sec., made exec. v.p. of Schlage Lock Co. Marron Kendrick elected v.p. and sec.

### Both Steel Men



• CF&I will be in for some operating changes now that Carl W. Meyers is its new pres., while in Los Angeles, Frederick A. Purdy (right) will head operations for the new Ryerson & Son steel plant there, as manager.

### Food Producers

Norman Elliott Dole, Western Sugar Refinery supt. since 1920, who retired Oct. 1, is succeeded by William J. Resch, who becomes gen. supt. of Western Sugar Refinery in addition to his duties as gen. supt. of all operating plants of Spreckels Sugar Co. in California. E. L. McKeany joins Western Sugar Refinery, Spreckels Sugar Company, San Francisco, as v.p. in charge of sales.

M. E. Brooding promoted from manager statistical division, California Packing Corp., to newly-created position of director of economic research. J. R. Doney moves up to head of statistical division.

James A. Finley named mgr. Exchange Orange Products Co., Ontario, Calif., to succeed Herbert S. Bailey, retired.

J. Dudley Waller named general manager of the new \$1,500,000 Butler Packing Company plant which is nearing completion in Oakland.



F. R. Weisman

**Frederick R. Weisman** becomes pres. of **Hunt Foods, Inc.**—one of youngest pres. of a major company, he's only 34—when **M. E. Wangenheim** becomes chairman of newly created executive committee which will co-ordinate **Hunt Foods'** operations. Weisman was formerly plant mgr., treas., and v.p., respectively.

**John D. Vellis** elected pres. in charge of **Guggenheimer division** (dried fruits) of **Hunt Foods, Inc.** **Robert H. Baxter** elected asst. to pres. . . .

#### Oil Men

**Harold L. Severance** elected assistant secretary of **Standard Oil Co. of California**.

**Wallace B. Curtis** appointed public relations director of **General Petroleum Corp.**

#### At Sea

**H. Boyce Luckett**, of **American President Lines'** **Washington, D. C.**, office, transfers to co. headquarters in **San Francisco** to be exec. asst. Other **American President** personnel changes resulted from retirement of **Daniel T. Buckley** as sec.-comptroller; **George S. Williams** as asst. gen. office mgr., and **W. C. Laughlin** as pier supt. **E. D. Flaherty** assumes sec. post while **J. A. Tognetti** becomes controller; and **W. H. Sharon** named director of industrial relations.

**Fred Cairns**, mgr. **San Rafael Chamber of Commerce**, elected to the chairmanship of the **Bay Area Maritime Committee**. **Lyford M. Morris**, mgr. **World Trade Department, Oakland**, Cof C, elected vice chairman, and **M. A. Cremer**, mgr. **Marine Exchange of San Francisco Cof C**, reelected sec.

#### Bay Area Boosters

**Charles C. Trowbridge Jr.**, formerly assistant to the president of **W. A. Bechtel Co.**, elected secretary of **San Francisco Bay Area Council, Inc.** The council is opening offices at 315 **Montgomery St.**, **San Francisco**.

**R. Earl Fisher**, v.p. of **P. G. & E.**, apptd. **Northern California** chairman of **Committee for Economic Development**. Fisher is at present chairman of the **Postwar Planning Committee** of the **San Francisco C of C** and vice-chairman of **San Francisco Bay Area Council, Inc.**

#### New Officers

**William N. Modglin** named pres. of **Modglin Co., Inc.**, **Los Angeles** molded plastic manufacturer, and **A. Lois Modglin** named v.p. and secretary—company changed from partnership to corp. . . .

Officials of **Mineral Wool Insulations Co.** are: **Harvey H. Head**, pres.; **Charles W. Hawthorne**, v.p. and chief engineer; **Richard L. Gray**, sec.; and **C. T. Sauer**, treas. Head was formerly with **Kaiser Co., Inc.**, **Hawthorne** with **Johns-Manville**, and **Sauer** with **W. A. Bechtel Co.**

#### Tired

**Robert W. Barker**, manager of accounts payable and receivable department, **Bethlehem Pacific Coast Steel Corp.**, retires after 39 years with the company.

(Continued on page 56)

# IF YOU WANT TO SHOW Pleasing Profits

**Mechanize your material handling operations and stop worrying about price increases.**

**You can insure your profit position by converting your unskilled labor into skilled labor and achieve mass production at low cost.**

**CLARK TRUCTRACTOR** conducts surveys of material movements and recommends new methods and means to reduce production costs.

**A copy of Clark's "Material Handling News" is yours for the asking.**

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**National Material Handling Exposition, Cleveland, January 14 to 17, 1947.**

## CLARK TRUCTRACTOR

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BATTLE CREEK, MICHIGAN

OTHER PLANTS — BUCHANAN, JACKSON, BERRIEN SPRINGS, MICHIGAN

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METAL SPOKE WHEELS	ELECTRIC STEEL CASTINGS	

**Prices on CLARK products will not be advanced in excess of increased costs.**



# WESTERNERS AT WORK...

George A. Martin apptd. director of a new WAA division which will advise purchasers of real property on type and amount of insurance which must be carried to protect Government's interest—division offices at 150 Sutter St., San Francisco.

## Colorado

Ray M. Knutson leaves geology dept. of Bunker Hill & Sullivan Mining & Concentrating Co., Kellogg, to become geologist for Empire Zinc division of New Jersey Zinc Co., at Gilman.

Thomas G. McGrath, Jr. takes post as supt. of Lombard Mining Co., Idaho Springs, where company plans mill installations. He's just returned from Bolivia where he was mill supt. for Bolivian Tin Corp.

Bay Petroleum Corp., Denver, names Roland V. Rodman of Denver, pres. to succeed Charles U. Bay, who was chosen chairman of the board of directors. Bay was granted a leave of absence for the period of his service as United States ambassador to Norway.

Dr. D. J. Harman of the U. S. Department of Agriculture, stationed at Fort Collins, Colo., is among eight American farm experts sent to London for an inspection of British agricultural research stations. The ministry of agriculture said they would be guests of the government.

W. B. Jacobson has been appointed division engineer for the Pueblo division, Denver and Rio Grande R. R., replacing Glen S. Turner, now chief engineer for the Denver and Salt Lake R. R. Other changes in the engineering department include appointment of H. V. Meek as roadmaster with headquarters at Salt Lake

City, succeeding J. F. Selby, promoted to the position of trainmaster-roadmaster with headquarters at Gunnison, and appointment of H. O. Chappell as roadmaster with headquarters at Pueblo.

## Idaho

A. M. Hoffstater, Seattle, is pres. of Sunrise Mining Co., new firm, which will operate property on Big Creek near Kellogg. . . .

Walter Scott succeeds Howard McBride as mgr. of Bunker Hill & Sullivan's employment office and insurance and compensation division, at Kellogg. McBride had been with the company 46 years.

## Montana

William Logan, Dillon, is operations mgr. for Volash Block & Tile Co., Dillon, which mines volcanic ash for using in bldg. blocks. He was previously pres. of Beaverhead County Mining Assn. . . .

L. L. Sloss is working with U. S. Geological Survey in studying possible oil horizons in Montana. He left faculty of Montana School of Mines at Butte to take the job. T. E. Peery succeeds him on the faculty.

Robert A. Blake transfers from East Helena plant to Leadville Kokomo milling unit of American Smelting & Refining Co. at Leadville, Colo., as mill metallurgist.

## New Mexico

Officers of New Mexico Development Foundation, Albuquerque Industrial Research Organization, which is currently making surveys, market reports, etc., for firms interested in New

Mexico plant expansion, are: Robert Porter of Las Cruces, pres.; Sidney M. Weil of Albuquerque, managing director; Louis McRae, Albuquerque, treas. Other directors are at Roswell, Lordsburg, Portales, Raton, Silver City, Tucuman, Clovis, Alamogordo, Zuni.

John C. (Jack) Pierce is exec. sec. of New Mexico Miners and Prospectors Assn., succeeding R. H. Downer, resigned. Pierce is now with Manhattan project at Oak Ridge, Tenn.

Col. L. E. Seeman, commander of Los Alamos military reservation, has been ordered to Washington, D. C., by Maj. Gen. Leslie F. Groves, chief of Manhattan engineering district.

## Nevada

James P. Hart, veteran Nevada mining engineer, heads newly-organized western Nevada chapter of the Western Mining Council, Inc. Named to serve with him were Fred Delongchamps, v.p.; Parker Liddell, sec., and August Frolich, treasurer.

## Oregon

E. B. Stanton appointed asst. gen. mgr. and engineer in maintenance of way dept. of Spokane, Portland & Seattle Rwy. Co., at Portland.

Ivan Bloch, chief of Bonneville-Power administration's division of industrial and resources development, loaned to Dept. of Interior as special consultant to Secretary J. A. Krug. He will prepare a series of reports dealing with economic growth of nation, particularly in West, and in Alaska.

A. P. Lerch has been upped to chief tool design engineer for Hyster Co., Portland. He will be in charge of all tool designed for Hyster's three plants, and will headquarter at Portland. R. W. Ager, formerly asst. export manager, has been appointed new personnel manager of the Portland plant of Hyster Co.

## New! TURRET-TYPE FLUORESCENT LUMINAIRE

This new SMOOT-HOLMAN fixture incorporates the new turret lampholder which holds the lamps firmly in place without additional safeguards. The lamps are quickly inserted by depressing either face of the turret with one end of the lamp until the other end clears the opposite face and slips into place.

The turret lampholder permits use of the new Jack Rabbit, for split-second starting. The luminaire itself is crafted according to Smoot-Holman quality and conforms to the new 9A RLM specification. Overall length 49 1/8", width 11 3/8", height 7".

Catalog No. NET - 2461

using the new Turret Lampholder



OFFICES IN PRINCIPAL WESTERN CITIES • BRANCH AND WAREHOUSE IN SAN FRANCISCO





Joseph R. Blunt

With service of more than a quarter of a century in the lumber industry in Oregon and Wash. behind him, Joseph R. Blunt, Portland, has been named mgr. of Washington, D. C., office of the West Coast Lumbermen's Association where he will be the eyes and ears of the West Coast lumber industry in the nation's capital. Blunt has headed the trade promotion dept. of the association.

B. E. Hearn succeeds J. A. McTarnaghan, retired, as purchasing agent at Portland for Pope & Talbot, Inc.

J. C. Williams returns as secy. of North Bend C. of C.

E. B. Shipley named manager of plant food division of Swift & Co. at Portland.

Kit C. Conyers, former pres. of Portland C. of C. and Portland district mgr. of Pope & Talbot Lines, becomes gen. mgr. of new organization known as West Coast Trans-Ocean Steamship Co. H. A. Caraplis is pres. of firm which has offices in the Postal Bldg., Portland. Company plans tramp steamship service.

#### Utah

Clark L. Wilson returns from Naval duty as engineer and geologist with New Park Mining Co., Keetley, Utah. Winton L. Seymour also returns from service to Natl. Tunnel & Mines Co., Toole, as asst. geologist.

Durtel L. Brown is asst. mill supt. and metallurgist for Combined Metals & Reduction Co., Bauer. He held a similar post for Fresnillo Co., Mexico, before coming to Bauer.

Frank W. Wichman retires from engineering dept. of U. S. Smelting & Refining & Mining Co. in Salt Lake City after 25 years' service with company.

Orson John Hyde named Utah manager and Frank D. Sawyer assistant manager of Mountain States Telephone & Telegraph Co., when Franklin S. Cundiff retired.

#### Washington

A. L. Baxter, Yakima, and Louis Wasmer, Spokane, named to Western Aviation Conference board of directors at recent Reno meeting.

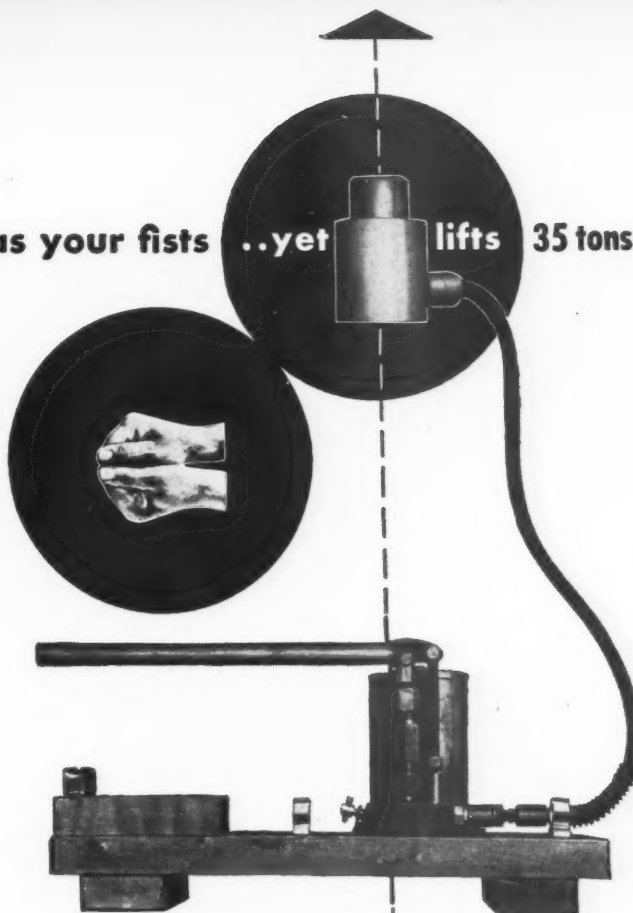
J. O. Yeasting, Seattle, formerly Boeing Aircraft Co. asst. sec.-treas., moves up to asst. to Boeing pres., William M. Allen. His job will be to administer company's budgetary cost control and organizational research activities. Jack V. Sheehan and Ralph Bell have joined the company's sales engineer staff.

H. R. Oldfield, former major general and special asst. on anti-aircraft to Gen. H. H. Arnold, is now project supervisor on a Boeing-Army Air Forces research program to test pilotless aircraft and guided missiles. Most of the research is done at Seattle Boeing plant with actual tests on Great Salt Lake Desert near Wendover, Utah.

O. A. Tucker named v.p. in charge of operations at Pacific Car & Foundry Co., transferring from Everett Pacific Shipbuilding & Dry Dock Co., where he was gen mgr. Robert Le Blanc succeeds him at Everett Shipbuilding.

George Douglas, v.p. and mgr. of Puget Mill Division of Pope & Talbot, Inc., resigns from firm to become active in real estate developments in and around Seattle. Douglas organized the Puget mill division which handled company real estate holdings.

small as your fists ..yet lifts 35 tons



Malabar Mobilpower—the jack of all jobs

where space is cramped and  
real power is needed. Also 15 ton  
capacity with 4½ inch low height; 50 ton  
—11 inch; 30 ton—28 inch; 60 ton—  
16 inch and 100 ton—21 inch. Write for  
complete catalog on industrial jacks.

**MALABAR** a product division of  
**menasco** MANUFACTURING COMPANY

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# REGIONAL REVIEWS

## SIERRAS TO THE SEA

**S**AN FRANCISCO — The fruit and vegetable canning industry of central and northern California, the biggest industrial operation of this portion of the state in prewar years, has gone in for the heaviest production by far this season that ever has been known.

The most outstanding development is the fact that nearly 50 per cent more cling peaches were packed than ever before,

which apparently will be almost equally matched by a tremendous tonnage of tomatoes and tomato products coming up. An estimated pack of 17,500,000 cases of peaches compares with the previous record of slightly less than 13,000,000 cases in 1942.

Under present conditions of short supply, no doubt even this stupendous output will be moved into consumption, for

if the domestic channels all become filled up, which seems unlikely, foreign markets are anxiously waiting for a supply. In prewar years about 20 per cent of the peaches went into export, mostly to the United Kingdom.

Increased efficiency in production in canneries, particularly in the speeding of peach-pitting machines, is partly responsible for the situation. The rest of it is heavier production in the orchards, because the higher prices to growers since the outbreak of the war made it possible for them to fertilize, cultivate and thin on a scale previously impossible.

The big "if" from now on is whether the market can continue to absorb such an output. Contributions of \$1 per ton each by growers and canners will put \$1,000,000 into a sales promotion and advertising fund this year. Probably not much of the fund will be spent this year; instead, it will be kept in reserve to do the big job that may be needed in 1947.

Shortage of tin cans became crucial in the peak of the season, and a fourth can company is coming into the field, Atlas Imperial Diesel Engine Company of Oakland, headed by R. J. Miedel, former Hazel-Atlas Glass Company head for the Pacific Coast. It will not only sell cans, but also can making machinery.

### Dashed Hopes

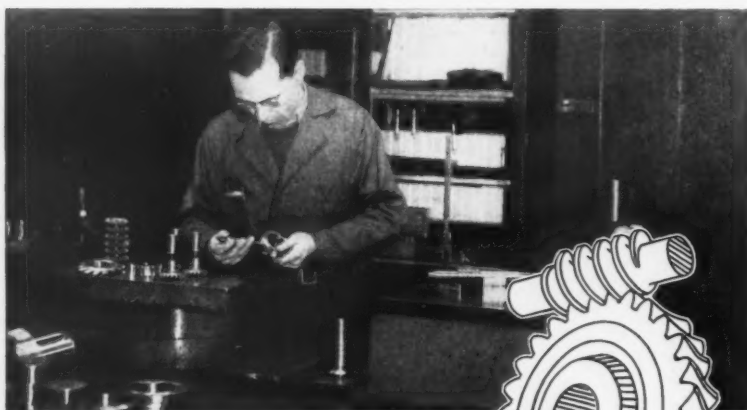
Hopes that ship-wrecking companies soon would be at work cutting up the wartime freighters laid up in Suisun Bay have been dashed, temporarily at least. It has been reported that the prospective deal of Boston Metals Co. for Richmond Yard 4 is off, because the company could not get a long enough lease on the shipyard.

Meanwhile the Kaiser people have notified their employees that they intended to bid on Yard 3, despite the government's insistence on lease terms of \$600,000 a year. Supposedly the government was going to insist that the yard be used for ship construction and repair only, but now has changed its tune to permit any activity engaged in by other shipyards, a modification that covers a lot of territory.

Before long the city of Richmond hopes to complete an agreement with War Assets Administration for taking over Yard 1 and the prefabrication area of Yard 2. The land and buildings are well suited for heavy industry, and Richmond expects to attract some good companies.

### Second Bay Crossing

The joint Army-Navy board which has received 14 proposals for a new crossing of San Francisco Bay to relieve the congestion on the present bay bridge has narrowed the locations down to three. Recommendations on these will be submitted to Congress, which must then act. It may be a long process, and it is expected that it will take five to eight years before a new crossing can be completed.



## Johnson Gear Craftsmen are faithful to your specifications

When you send your blanks, specifications and drawings to Johnson Gear Company you are assured that all work is done by experienced gear specialists in our own plant.

The J G heat-treating department is fully equipped with gas and electric furnaces, quenching tanks, and automatic electric recording instruments that safeguard every step to high standards... for better gears.

Back of our service is a gear-cutting ability and experience gained through years of solving many problems in the manufacture of gearing and kindred parts... an engineering knowledge of technical and practical application in the art of transmitting power and motion. Gears produced in large or small quantities to specifications as to size and materials. Send us your orders.

### GEARS GEAR CUTTING MACHINE WORK

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### GRINDING

Internal  
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Centerless

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### LIGHT MANUFACTURING

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### ENCLOSED UNITS

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### HEAT TREATING



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MAIN OFFICE AND WORKS · BERKELEY · CALIFORNIA

If the new crossing includes railroad tracks, it will have to be a low level bridge, the board members announced, and they said that certain portions of the Reber face-lifting plan for the entire bay were not too expensive. The railroads, however, do not want to pay for any part of the bridge.

The official consensus is that solution accepted must fit into the traffic pattern of the bay area, must not dump traffic into congested streets, nor interfere with San Francisco waterfront operations or the national interest.

#### Marine Corps Important to Bay

Opposition to the Marine Corps purchase of 90 acres of industrial property in San Francisco has largely subsided, now that it is becoming evident how important the Marine Corps activities are to the city. G. L. Fox, manager of the industrial department of the San Francisco Chamber of Commerce, reports that the entire Pacific area is served out of the port, that the monthly payroll is 2,300 people and \$613,000, and that \$4,500,000 is being spent to build up a major supply base.

New industrial enterprises are continuing to come into the bay area at normal rate, and representations will be made to the Civilian Production Administration that commercial and industrial building permits should be at least equal to the allotments for housing, in order to build up employment conditions.

#### Magnesium Truck

An all-magnesium truck train which can haul a payload of 6,000 lbs. more than conventional steel units of the same type, has been developed by The Permanente Metals Corp. for the Permanente Cement Company.

The magnesium bulk cement carrier is a 60-ft. unit consisting of a semi-trailer and trailer pulled by a tractor. The entire train (with a full load of fuel oil) weighs 25,570 lbs. It can handle a possible payload of 51,230 lbs. as compared to a payload of 45,310 lbs. for similar lightweight steel units. Side plates of the body act as load-carrying members, thus eliminating the conventional frame.

#### Lamp Ballast

General Electric Company will manufacture ballasts for fluorescent lamps in their Oakland, California, plant. This is the first time ballasts have been manufactured on the West Coast.

#### Diesel Savings

Savings in fuel costs by six diesel-electric locomotives used on the San Francisco waterfront by the State Belt Line amount to \$33 a day each, according to J. V. Nardini, superintendent. He said they are 10 per cent faster, 20 per cent more efficient, 33 per cent more economical.

## How would YOU make a ski lift...



—to ring up 1000 fares an hour?



HORDES OF SKIERS will soon converge on winter resorts, eager to swish down snowy mountainsides. But how about getting them up again . . . in a constant, profitable stream?

A fast-growing number of them prefer literally to coast up in twos on the patented Constam Ski Lift, which Roebling builds under exclusive license in the eastern half of the U. S. Resort owners are taking to it, too. For this lift, mechanically capable of handling 1000 or more fares an hour, quickly pays for itself!

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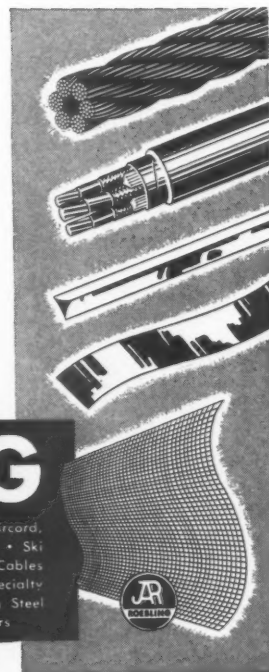
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## REGIONAL REVIEWS

### THE PACIFIC NORTHWEST

**I**N SPITE of the many shortages, including lumber, causing construction difficulties, S. V. Fullaway, Jr., secretary-manager of the Western Pine Association, forecasts that shipments of lumber by the pine industry for 1946 would break all previous peacetime records with an estimated 5.4 billion board feet. During the first nine months of this year production has been about 5% above last year and shipments about 1% above 1945.

The continuing high level of activity in the lumber industry is indicated by the large number of expansions in various operations, transfers of ownership, and timber purchases. The Hayward Lumber Co. of Los Angeles announced plans for a 100 MBF mill in southern Oregon in Douglas County where the company recently purchased a sizeable timber stand. Snow Mountain Lumber Co., a newly formed organization, has started construction of a sawmill at Burns in eastern Oregon and will be producing 60 MBF per shift before the end of the year.

Simpson Logging Co., of Shelton, Wash., has asked the federal government

for a 100-year contract under which 158,760 acres of timberland owned by the company would be pooled with 111,466 acres of federally-owned timberland in Grays Harbor and Mason Counties, and both tracts logged cooperatively on a sustained yield basis. Hearings on the proposed contract were heard during September by the U. S. Forest Service.

#### Cutting National Forests

Tite Knot Pine mill of Redmond, Ore., purchased about 5,000,000 ft. of Ponderosa pine in the Metolius River area of the Deschutes National Forest. A slightly larger quantity of timber from the Umpqua National Forest went to three Oregon firms, Johnson and McGrew Bros. purchasing more than half, and the Western Battery Separator Co. of Roseburg about a quarter.

The Mutual Lumber Co. of Bucoda, Wash., is retiring from operation this year, but its plant will be taken over and operated by the Southwest Oregon Lumber Co. of Grants Pass and Klamath Falls, Ore. Lake Logging and Lumber Ltd. has

sold its logging stand, mills, and other equipment on Vancouver Island to Western Forest Industries for a reported \$5,000,000. At Everett, Wash., the Eclipse Mill Co. has been sold to a group of lumber retailers in Philadelphia, and the Canyon Lumber Co. has been sold to a similar group in New York.

Brooks-Scanlon Lumber Co., of Bend, Ore., has been merged with the Brooks-Scanlon Corp. of Foley, Fla. Both organizations were outgrowths of Minnesota lumbering interests. The new company will be headed by Harry K. Brooks of Bend as president.

Douglas fir lumber and logging workers in western Washington and Oregon are the highest paid workers in American industry according to a statement made by Walter A. Durham, Jr., research director of the lumbermen's industrial relations committee. Since April of this year their average hourly earnings have been \$1.425 which is more than 74 per cent above the prewar average and this does not include overtime earnings, vacations, night shift pay, or other extras.

Several new wood products have been reported during the past month, either as actualities, or as possibilities. The Oregon forest products laboratory at Oregon State College has reported that the native juniper of central Oregon may be a feasible source of cedrol, a chemical used in insect-

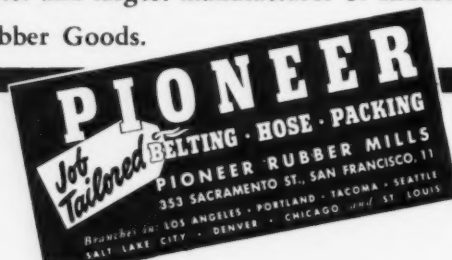


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cides, moth repellents, sprays, soaps, and cosmetics. The present source of cedrol is eastern cedar.

At Ridgefield, Wash., the Ridgefield Shingle Co., has been cutting fir shingles instead of the customary cedar variety as an emergency measure to keep the mill in operation when cedar logs could not be obtained. Six cars of fir shingles have been shipped to California and one to Colorado. Sales have been made at the regular cedar shingle prices.

Treated lodgepole pine will be produced by a new firm at Bend, Ore. Poles will be handled by a mechanical peeler and in the first operations treated with creosote. Later it is planned to use pentachlorophenol as the preservative. Lodgepole pine and tam-

SEATTLE—Recommending straightening of the Duwamish River channel and flood protection works on the Green River above the Duwamish, Lars Langloe, consulting engineer of Olympia, reported to the Seattle City Planning Commission that some 1,120 acres of land could be made available for expansion of the Seattle industrial area. The report indicated the belief that industrial expansion would continue to the south of the city along the Duwamish and the upper streams, the Black and Green rivers.

Improvement of the Duwamish channel would be divided into three steps, of which the principal work would be straightening of the channel to place the river on the extreme west side of the valley except for a short section bisected by the Pacific highway. This portion of the work, estimated to cost 2½ to 3 million dollars could be undertaken without the construction of a flood detention reservoir on the Green River. Improvement of the Green River and Black River basins would not be feasible without flood control, a project which has been the subject of study by the U. S. Engineer Dept., but which has not as yet been proven economically feasible.

Local interests were unanimous in declaring against providing navigation facilities in the improved channel, except for light barge traffic. Costly construction and maintenance of bridges over navigable waterways was given as the principal reason for the objection. However, the area is well served, transportation-wise, by three transcontinental railroads and a good network of highways.

arack, formerly wasted in western Montana are now being used to supply a demand for poles and posts in the vicinity of Missouri. At Thompson Falls, Mont., last year 2,000,000 gun stocks were manufactured from kiln-dried Ponderosa pine.

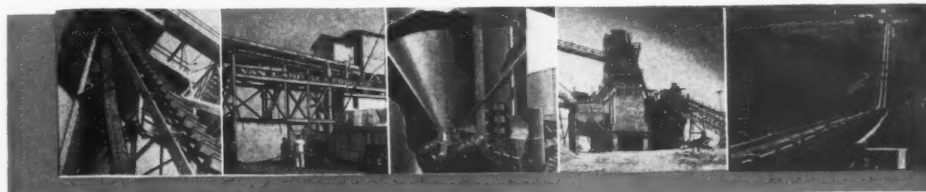
#### New Type of Freightier

In about six months Alcoa expects to call for bids for the construction of an all-aluminum freighter. The ship will be 400 feet long and will carry 8,000 tons of cargo. The higher cost of the aluminum over steel will in part be compensated by the greater capacity (a steel ship of similar dimensions could carry only 6,500 tons), greater speed, and lighter weight.



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However, the principal reason for the special design is the use for which it is intended. The ship will be used to transport bauxite ore through shallow inland waters from the mines in Dutch Guiana to Trinidad.

Although the alumina plant at Salem, Ore., never has produced alumina in commercial quantities, operations of the plant as a source of nitrogen fertilizer was credited with increasing the value of cover crops, vegetables and grass seed crops this year by at least \$4,000,000. Some 14,500 tons of fertilizer produced by the Salem plant have been distributed in three Northwest states this year.

Operation of the plant next year for the continued production of ammonium sulphate is assured according to a statement by J. P. Gallagher, president of the Columbia Metals Corp., which operates the plant for the federal government. The Bureau of Mines is reported to be asking for an allowance of \$1,500,000 in its 1947-48 budget for further experiments at the plant in the extraction of alumina from clay, the purpose for which the plant was originally built, but which it never has fulfilled.

Reports from the northeast corner of Washington indicate that that area may someday become an important source of zinc. Both U. S. Smelting and Freeport Sulphur are reported to be interested in the development of the Metaline district, and American Zinc is in possession of a

number of claims in the Slate Creek section.

Now under operation of General Electric Co., to which it was transferred September 1, from E. I. Du Pont de Nemours & Co., the Hanford Engineer Works in Washington is scheduled for a large scale expansion program. Laboratory data is now being assembled and analyzed to plan construction of a new semi-works for a new separation process. A new type of production unit is also being studied and design of the unit is expected to progress as fast as accumulated data can be evaluated.

### New Ship Propeller

Several new industry possibilities have been reported during the month, as well as a number of expansion programs. The Pa-

**SPOKANE**—General Machinery Co. will add a new metal fabricating department to its mining machinery production plant at an estimated cost of \$50,000. . . . Two new corporations were formed in this area during the month, the Spokane Pattern Engineering Co. and the Pataha Valley Lumber Co. . . . At Pocatello, Idaho, work is expected to begin soon on a new \$100,000 packing plant to replace the Zweigart plant which burned last spring.

cific Car & Foundry Co. at Renton, Wash., has been engaged in a series of tests of the new cycloidal ship propeller invented

by Prof. Frederick K. Kirsten, inventor of the Kirsten aluminum pipe. Tests on two types of small craft, a Navy medium landing ship and an Army wooden harbor tug, are reported to have proved the commercial feasibility of both the fixed and variable pitch types of cycloidal propulsion.

An experimental chinaware manufacturing plant will be constructed at Everett, Wash., by Albert P. Bumbera. The city planning commission last month granted Bumbera a temporary permit to operate in an existing building. Should the process prove to be successful in manufacturing fine chinaware from Washington clays a much larger plant will be constructed to permit the firm to enter quantity production.

On the less optimistic side of industrial expansion, at least two plants in the Northwest were closed indefinitely last month. The truck trailer plant established during the war at Gillings, Mont., by the Pointer Willamette Co. of Portland, was closed by a strike of the local machinists union the middle of September and will not be reopened.

At Burley, Idaho, the Amalgamated Sugar Co. closed an experimental syrup manufacturing plant because of "obstructionist and reactionary measures imposed by the federal government," according to a statement by R. H. Cottrell, vice president of the company. The plant had been providing bottlers, bakers, and ice cream

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makers with syrup on a small scale, meanwhile experimenting in an effort to extract a greater percentage of sugar from western-grown beets.

Employment in the Northwest appears to have been spotty throughout the summer, judging from reports emanating from various sections of the region. The Washington Department of Unemployment compensation, reporting for July, said that in the Seattle-Bremerton area manufacturing was the principal industrial employing

**PORTLAND**—A sub-regional office of the National Labor Relations Board was scheduled for establishment in Portland by Oct. 15. The new office will process all cases arising in Oregon and Clark County, Washington. A 65% increase in unfair labor practices cases filed in Seattle was given as the reason for the establishment of the new office which will be under the direction of A. C. Roll.

factor, but the labor force was just under a half of the wartime peak, although nearly 50 per cent above the prewar period.

This picture will probably be considerably altered when reports for the coming months are made up since Boeing Aircraft Co. has greatly increased its hiring rate in the past month or two and expects the hiring to continue until next spring when the company will have about 16,000 employees, about a half of the wartime peak.

In Montana (August report) there was a 30 per cent drop in the number of job seekers and 25 per cent fewer new applicants for work. Employment opportuni-

**TACOMA**—Grogan and Donaldson have established the first firm of consulting foresters in the state of Washington. . . . A new paint field service laboratory has been established here by the Sherwin Williams Paint Co. It is the first field laboratory to be established by the company separate from a factory. . . . J. D. English Steel Co. has located a new plant which will stock and form all sizes of reinforcing steel.

ties remained about the same as the previous month, but 40 per cent more workers were placed than during July.

Oregon reported that over the whole state unemployment was down to 32,000 in July. Of this figure 9,000 were women and 10,000 were veterans. The food processing industry was reported short 6,000 workers, and the lumbering and logging industry was in need of an additional 1,000 workers. Cessation of seasonal activities was expected to increase the unemployment in some areas. However, as late as the first week in October the Eugene area reported 1,700 jobs listed with no takers. New workers are not coming into the area because of the impossibility of finding housing, the area being short about 5,000 dwelling units.

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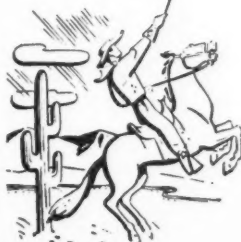
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# REGIONAL REVIEWS

## THE WASATCH FRONT

**S**ALT LAKE CITY.—The public power issue, which has been comparatively dormant in this area during the war years, has been fanned into activity again by announcement of plans to have Bonneville Power Administration market government-generated electricity in the southern Idaho area.

Major reason given for the contemplated extension of Bonneville lines into southern Idaho is to provide cheap power for development of "phosphates and other natural resources."

Disclosure of the interior department plans brought an immediate joint statement from the presidents of three private power companies in Utah, Idaho and Montana to the general effect that: (1) There is not now, nor has there been in recent years, a shortage of power in the territory served by Utah Power & Light Co., Idaho Power Co. and the Montana Power Co.; (2) No industries have been prevented from locating in these years by either lack of power and the cost of same; (3) On the contrary, large blocks of power have been transmitted during the war years from these areas to the Pacific Northwest;

(4) Projects for production of fertilizers from phosphates are now being supplied with power by the private companies; (5) Plans are now under way by these private companies to meet future demands for industrial power.

With the proposed Columbia Valley Authority already a hot issue in the Idaho political campaign, the proposed extension of Bonneville lines has served to superheat it.

### Utah Worries About Projects

Utah's chief concern in the matter arises from the fear that government-generated power will be brought into this market area from the Pacific Northwest, thereby ruling out proposed Colorado River projects which would have to be largely financed by sale of power. Even the public power enthusiasts here do not want to get it from the Northwest at the expense of reclamation-power projects in this area.

Utah's Colorado River committee has been assured by Bonneville Power Administration authorities that there is no danger of a market invasion from that source, as all available power and more can be dis-

posed of in the Pacific Northwest. But southern Idaho is disturbingly close.

Few people in this area ever took seriously the propaganda that U. S. Steel Corporation's interest in Geneva steel plant was to keep it out of the competitive picture by acquiring it and then closing it down. The few who did harbor that fear should have had their suspicions allayed by the recent visit of 13 of the corporation's 15 directors to the plant.

Irving S. Olds, board chairman, and Benjamin F. Fairless, president, spent a good share of their time assuring Utahns that they proposed to operate the plant at the highest level the market would support. The present operation (about 40 per cent of capacity) would be greatly increased, they pointed out, if railroad cars were available to transport iron ore and coal to the plant in larger quantities. Shortage of cars has been and is now the bottleneck limiting the operation.

Here, briefly summarized, are the major commitments made by the visiting steelmen:

The corporation is interested in producing all the steel it can market at Geneva.

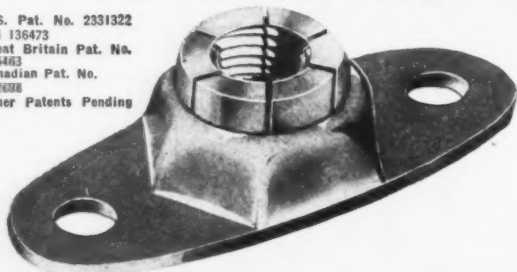
The wide hot strip mill will be completed as quickly as possible. Orders have already been placed for mechanical and electrical equipment.

The estimated \$18,600,000 expenditure for this addition to the plant is a minimum

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and not a maximum conversion program. The corporation will produce at the plant whatever variety of products the market justifies.

Satellite manufacturing and fabricating plants will be encouraged by the corporation to locate in the area because "the best customer is one in your own back yard."

Freight rate reductions are essential for realization of the plant's potentialities and to give Pacific Coast and other Western consumers expected price benefits. He mentioned rates on both inbound raw materials and outbound steel products.

### Geneva Satellites

War Assets Administration has approved sale of a silica brick plant in Lehi, Utah, to General Refractories Co. of Pennsylvania for \$375,000 cash. The plant was operated during the war by Gladding McBean & Co. to produce fire brick for the Geneva, Utah, steel foundry. The war-time operator is presently occupying the plant under an interim lease.

Other firms which plan to come to Salt Lake are the Besser Manufacturing Co. which has headquarters in Alpena, Mich. Besser will manufacture a full line of machinery for the manufacture of concrete blocks. It will employ 60 to 80 persons.

Officials of Chicago Bridge & Iron Company are also investigating possibilities of acquiring a plant site near Geneva. Company fabricates and erects structural steel.

### Mines Being Organized

A quiet organizing campaign at the mills of Utah Copper Co. may be the prelude to an attempt of John L. Lewis' United Mine Workers of America to move in on the CIO-International Union of Mine, Mill & Smelter Workers on a broad scale. Thus far UMW organizers have been active only at the mills of the one company. But a few hints have been dropped that if this venture is successful, the Lewis union will attempt to move into the non-ferrous metals industry in a big way. The national convention of the IUMM&SW dramatized the leftist issue which has been boiling for some time within the CIO union by adopting a resolution calling for nationalization of the industry.

But while the Communist influence is allegedly strong in the international union of CIO metal mine workers, it is not strong in this district. The pinks and fellow travelers have been unable to make any noticeable headway in the local unions or the district setup. Indicative of the sentiment locally was the action by the recent Utah state CIO convention in adopting a resolution barring known Communists from union offices by the lop-sided vote of 107 to 9. And the IUMM&SW is the largest union in the state congress.

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# REGIONAL REVIEWS

## TEHACHEPI TO TIJUANA

**L**OS ANGELES—Which should come first—the employment chicken or the housing egg—continues a question for debate among local business men.

So far, the general public, harassed by the fear of eviction and keenly sympathetic with the homeless veteran, has been solidly in favor of sidetracking industrial and commercial building until more housing is built.

Now some faint signs are discernible which hint of a day when jobs, not housing, once more will be the paramount public issue.

So conservative a source as the Security First National Bank's research department has just ventured the opinion that the housing shortage is now at its worst and that the equilibrium point between production and growing demand has been reached.

"It is believed," says the bank's report, "that an approximate balance has now been reached between the number of homes being completed and the need for additional housing created by in-migration and the return of service men. . . .

"Adequate statistics on home completions are lacking, but there is reason to

believe that the number of dwelling units being finished in Los Angeles County has reached, or is approaching, a rate of 4,000 per month. This is sufficient to house an additional 12,000 persons monthly. Presumably the current influx of population does not exceed an average of 12,000 per month."

War-time completions in the Los Angeles industrial area at best never exceeded 2,500 homes per month. Some say production recently has been even lower than this figure, although HH priorities lately have been dispensed in southern California at the rate of 5,000 to 6,000 a month. Others report lumber a little easier to get, while common brick production has risen and the mushrooming concrete brick industry seems headed toward overproduction. Substitute materials are appearing in the market—aluminum overhead doors for garages, quonsets made of corrugated aluminum.

At Phoenix this month, the first forms squirted from extrusion presses when Reynolds Metals went into operation in the former Alcoa plant, under lease from WAA, were destined for a local maker of aluminum window frames. The com-

pany expects shortly to reach a goal of 30,000 frames weekly. The 18 giant presses at Alcoa should hit a peak of 4,000,000 pounds of extrusions and tubing by early 1947, plant officials say.

### Signs of a Change

From a preview of the approaching change, San Diego offers a good example. Once bulging with war workers and ready to split its housing seams, the city has shucked off thousands of its newcomers and has become once more a "Navy town."

Except at racing season, it is possible to get hotel accommodations without either advance reservations or intrigue. Vacancy signs have reappeared at motels. Interest is shifting to the question of providing jobs, rather than homes—a foretaste of what may be in store for other areas within a matter of months.

Another supporting indication is a downturn early last summer in vacant land. Activity fell off sharply and prices dropped as much as 40 per cent. Buyers, of course, were getting discouraged at the prospect of long delays in completing any sort of building, but runaway prices also had finally put the brakes on themselves.

Real estate brokers widely reported a tendency on the part of prospects to shy away from outlandish quotations and a willingness to wait and ride out the storm. Thus public psychology seems on the verge of a major change.



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The latest curb on industrial building has nearly halted starting of new plant structures. Impatient though many are to add plant capacity, shoppers for buildings are reported to be noticeably more cautious.

A 30-year-old brick building, priced at \$8 per square foot, no longer finds easy sale on the basis that "it couldn't be built for that price today." A man who is prepared to spend a quarter-million dollars for a building is likely nowadays to insist on scaling down values according to some sort of normal depreciation schedule.

Perhaps he figures that before many months, he can build, for a little more money, an ultra-modern plant to suit his tastes exactly. Or, perhaps he has suffered such delay in deliveries or production materials that he doesn't have to expand quite so fast as he had expected. At any rate, shoppers for vacant industrial land are reported to be much choosier than last winter, again symptomatic of a return to sanity.

Little business enterprises continue to sprout vigorously and are clamoring for priority help of various kinds. Biggest howl of the season went up when CPA failed to come up with fourth-quarter steel allocations. Surprisingly, small businesses seem to be overlooking a good bet for materials from war surplus, for which RFC certifies them with priority ratings. Applicants so far have been very few, according to RFC.

One of the hardest jobs confronting the U. S. Department of Commerce is counselling would-be veterans who want to go into business. So many are woefully ignorant of the fundamentals, that much effort must be taken to get the neophyte started on a real fact-hunt of his own, minus the rose-colored glasses. Of course no one likes cold water thrown on his pet dreams, and the dash of realism comes hard to the inquirers.

Accustomed to this attitude, Department counsellors were astonished when an ex-GI returned to them with profuse thanks for their advice, announcing that he had abandoned his project in which he had planned to sink his entire savings of \$3,500. Following up on the leads given him, he had investigated and found the picture far less rosy than he had realized. He'd have dropped his entire nest-egg had he gone ahead, he confessed.

Hoping by direct action to help relieve the steel shortage, the California Manufacturers Association has launched an intensive drive to get metal scrap headed back to the furnaces. Estimating that California mills now get only 65 per cent of the scrap they require, CMA has appealed to its members to revive their war-time systems of scrap salvage. They also have asked the Maritime Commission to hurry up its ship-breaking program, which was supposed to supply 750,000 tons of scrap within the next few months.

In line with the request, War Assets

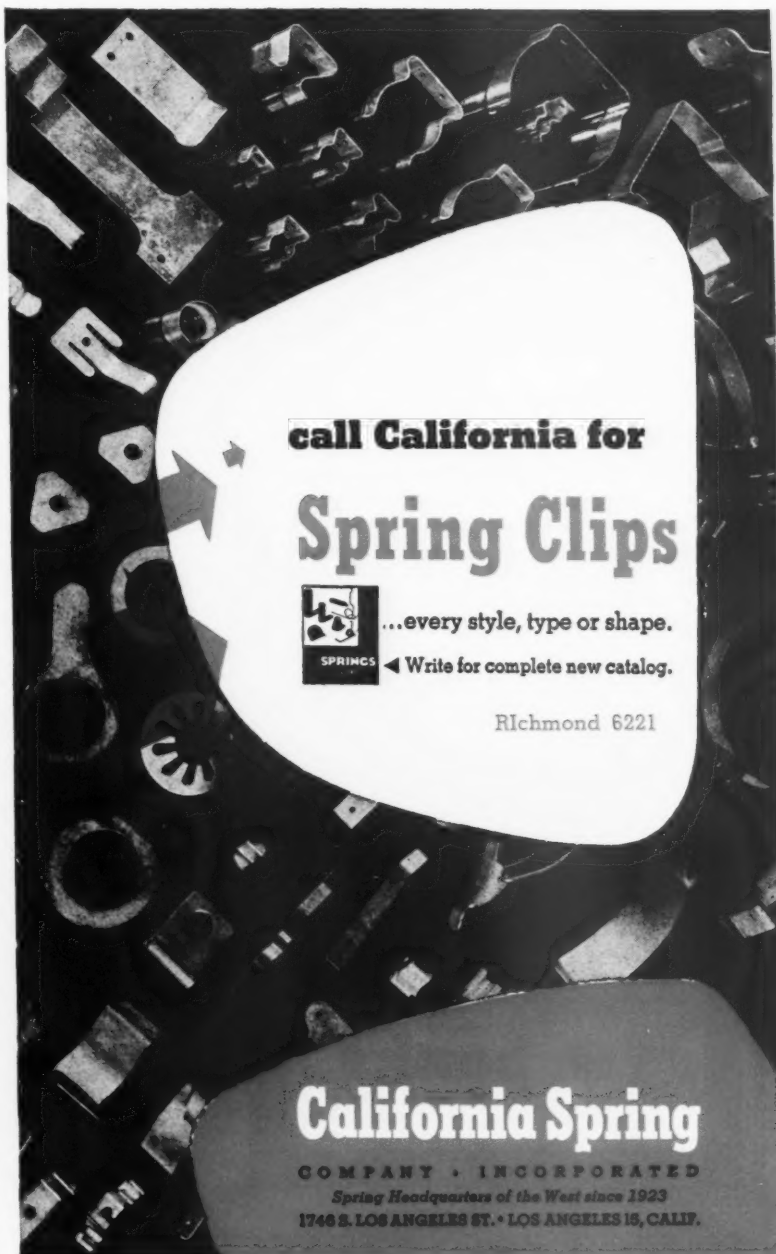
Administration officials have set up a local committee to inspect antiquated machinery in war surplus and junk it immediately, after stripping it of salvageable items such as motors.

### Packing Machinery Enterprise

Agriculture and industry have teamed up in a product which it is said will put California actively into world champagne markets. With a new automatic bottle-filling machine that reportedly solves technical problems formerly handicapping California vintners in mass production of this beverage of the elite, Pomona Machine Works is in process of launching a new line of automatic packaging equipment


that will provide Western sources for food preparing equipment formerly coming from the east. Olives, catsup, oil, and many other Coast products will be packaged automatically.

Lockheed has received a \$16,000,000 order from the Navy for PV-2 planes of the same model as the "Truculent Turtle," which set a new world's non-stop flight record. It is the first plane designed to carry atom bombs. Ryan recently booked a Navy contract for research on high-resistant alloys suitable for jet engines. Openly bidding for foreign business, Northrop called in consular representatives of Latin American countries to see a mock-up of its three-engined Pioneer passenger-cargo



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# Spring Clips

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## California Spring

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Spring Headquarters of the West since 1923

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ship, designed for short take-off run on small undeveloped landing fields, and for operation over mountainous terrain.

Other post-war projects reached fruition recently when Thor washing machines began to roll off local production lines, and a Dodge sedan, serial number 45,000,001 was assembled—first Dodge passenger car ever built on the West Coast. Its body had arrived in one of the newly authorized, oversized freight cars. Before the war, only Plymouths and Dodge trucks were assembled in the local Chrysler-Dodge plant.

#### Interest in Exports

Export business continues to lure forward-looking industrialists. Nearly 4,000 local manufacturers expressed interest in world markets by requesting a booklet put out on the subject by the Los Angeles Chamber of Commerce. The chamber is encouraging manufacturers to set aside a small share of their production for export now, on the ground that "the time may come when that export percentage may mean the difference between a profit and a loss for a year's operations."

A shirt-sleeves approach to the industrial community's problems is being tried by a chamber-sponsored Management research committee. The group is going to study (1) Basic material shortages, (2) needed products that could be manufactured here, and (3) local wage rates, which the chamber says are the third

highest nationally, while production rates are among the lowest.

The chamber has had good results with its recently opened "open capacity exchange," which seeks to find work for idle machines. More than \$2,000,000 worth of work already has been placed in this area by Eastern firms alone—most of them with the idea of producing locally their products which formerly they shipped West from their home plants. Pressure cookers, bicycle parts, storage tanks, and stainless containers are among the products. In many cases, it is believed, these arrangements may pioneer for the eventual establishment of branch plants on the West Coast.

#### Triangular Desks

One of the new departures dreamed up by local designers is a metal office desk, triangular in shape. Proponents claim savings in floor space—it fits better into corners—and state that the far corners of the ordinary rectangular desk become catch-pockets for superfluous papers which a busy executive ought to send on to files, or to some one else for action. Also, with the 3-cornered desk, he can interview two people at once, seating them close at hand along the diagonals. Producer is a former aircraft subcontractor (Fletcher Aircraft) now making its entry into a specialized field where there is no eastern competition.

Metallurgical research in connection

with development of new types of materials satisfactory for use in jet power plant and exhaust system equipment in planes, is being conducted at the Metal Products Division of the Ryan Aeronautical Company under contract with the Navy's Bureau of Aeronautics.

Chief object of the research is to develop metals capable of withstanding degrees of temperature over the 1600 Fahrenheit mark which are encountered in both jet and new high-powered conventional engines.

#### Wage-Hour Violations

Nearly half the 108 plants in Wyoming inspected in the last year by the wage and hour division of the U. S. Department of Labor were in violation of major provisions of the fair labor standards act, Duane Wendele, assistant regional director of the division, told the Wyoming State Federation of Labor convention held at Rock Springs. More than one out of eight was failing to pay the minimum wage of 40c an hour to one or more employees.

#### Ink For Jap Pact

Ink used to sign the surrender document of Japan on the deck of the battleship Missouri was made by a Seattle firm, the Dickson Ink and Chemical Company, which has been producing inks for the past twenty-five years.

*it's Sturdy*



**FROM ANY ANGLE YOU LOOK AT IT!**

No matter from which angle you look at the Fairbanks "Commander", you will find it a sturdily-built platform truck for heavy loads. Its double angle-iron frame and rigid construction withstand hard knocks. Heavy double ball bearing swivel casters promote quick starting under full loads, permit easy rolling and easy turning, as the operator wishes.

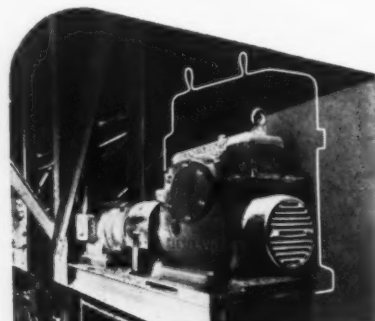
For specifications on "the Commander" and other Fairbanks trucks, write for Catalog 50

**THE fairbanks COMPANY**

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520 Atlantic Ave. Boston 10, Mass. 15 Ferry Street Pittsburgh 22, Pa.

PLATFORM, HAND AND BOB TRUCKS



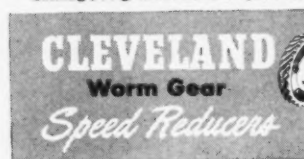
As the white outline indicates, a standard unit of nearly twice the framesize would be required to do the work of Speedaire.

### Even in dust and grime **SPEEDAIRE** does the job

DRIVING doctor rolls on starch dehydrating machines in a Chicago plant, the Speedaires shown above give their owner these three benefits:

1. A money saving of \$39 on each Speedaire drive, compared to conventional worm-gear reducers.
  2. With space at a premium, compact Speedaire proved ideal for this application.
  3. In spite of dust and grime that accompanies this manufacturing operation, Speedaire continues to perform at full efficiency.
- Speedaire is Cleveland's new, powerful, fan-cooled, worm-gear speed reducer. Because it is fan-cooled it will do more work—and deliver up to double the horsepower of standard worm units of equal frame size, at usual motor speeds. Speedaire can be installed economically on many applications where other types have been used heretofore—giving you the advantages of a compact right-angle drive. Speedaire gives the long, trouble-free service characteristic of all Cleveland units.

Catalog 300 gives a full description of Speedaire—enables you quickly to figure proper sizes for your equipment. Send for your copy. The Cleveland Worm & Gear Company, 5269 East 80th St., Cleveland 4, Ohio. Affiliate: The Fawcett Corporation, Centralized Systems of Lubrication. In Canada: Peacock Brothers Limited.





# REGIONAL REVIEWS

## CONTINENTAL DIVIDE

**D**ENVER—Upstart Denverites are breaking over the traces and displaying a mighty urge to put their town on the nation's industrial map. This is heresy. Denver's mighty moguls of finance and industry will frown and hiss a reproving tsk, tsk. Isn't their Denver just the way they want it and the way they intend to have it remain? Who are these brash upstarts, anyway?

Edgar H. Watson, president of the Exchange Club, is one of them. It is his organization that is putting on the first "County Fair" at the Denver municipal auditorium to dramatize recent business and industrial developments in metropolitan Denver.

While a program of entertainment is included, the fair features industrial exhibits of a sort not seen in Denver in many a year. Many of the exhibits and displays will be eye-openers, showing new industries in the community which have developed amazing vigor despite very recent origin.

No 17th Street financial barons belong to the Exchange Club, and the Denver Chamber of Commerce may squirm a little uncomfortably to see a group of Denver businessmen strutting about as if they had a story to tell and didn't mind letting the world know all about it.

### Country Club Atmosphere

It begins to look like the cozy country-club atmosphere that has gripped Denver industry in recent years is beginning to encounter rougher weather. New industries, new blood from outside, even new ideas from some of the younger native Denverites show scant respect for the snooty and monopolistic industrial pattern that has been throttling Denver's growth for the past twenty years.

Reflecting the hoodoo, Colorado's new publicity and advertising director, Lewis R. Cobb, begins his speeches by asking his audiences to answer his question by a show of hands. His question: "Do YOU want Denver to grow?"

Many who stick up their hands, for public observation, are prepared to gang up with other firms in their line of business to kill off any competition that may show up from "outside." Everybody wants Denver to have more business, more industry, more payrolls—so long as the growth is in somebody else's line of endeavor.

Dozens of important Denver firms are emulating the electrical products distributor whose place of business appears to be a one-room second hand store or something of the sort. Only the owner's trusted friends are allowed to see the extent and nature of the enterprise, which includes well-

equipped and expertly-staffed shops and extensive inventories of costly equipment all neatly concealed from tax assessors and potential competitors. Anyone making an examination of Denver's rapidly-growing industrial base will find this "hide it" complex evident at every turn.

The urge to look little and insignificant cannot stand up much longer. For one thing, the owners of these prosperous businesses vent their repressed pride by in-

dulging in fine homes, expensive motor cars and swanky summer places in the mountains.

Pretty soon the Missus, accustomed to her flashy furs and jewels, begins to be a little bit ashamed of the dingy enterprise where the money comes from. She begins to work on her man to tidy up the old junk yard so it won't be such a disgrace in case one of her friends might notice it.

In a few instances this has resulted in rococo transformations of the industrial establishments. Denver will see a lot more of this before long.

### Artists on the Rampage

If you note a wild gleam in the eye of Colorado's commercial artists these days,

## Ingenious New Technical Methods

To Help You with Your Reconversion Problems



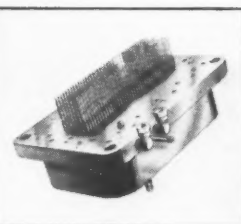
## 12,000 Holes per Hour! With New Gearless Multiple Spindle Drillhead!

The Zagar Gearless Drillhead can accommodate up to 400 drills in one head—drill up to 400 holes at one time! This revolutionary unit runs noiselessly and vibration-free on needle, tapered roller and precision ball bearings, and is lubricated by a patented automatic oiling system to insure trouble-free operation.

With this unit all holes are drilled at one pass, and valuable time is saved by the elimination of indexing and extra handling. It may be used on standard drill presses, or furnished as a complete hydraulic machine by the factory.

Another time saver, as well as a help on a tedious job, is chewing gum. The simple act of chewing seems to make the work go faster, easier—helping to relieve worker's fatigue—so that a better piece of work can be turned out with greater safety. Wrigley's Spearmint Gum may be used even when both hands are busy—right where the work is being produced.

You can get complete information from  
Zagar Tool, Inc.  
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Zagar 220 Spindle Gearless Drillhead



AA-98

it isn't because they've found the back entrance to some nudist colony's hideaway. They have organized. Matt Falk, an outstanding layout man and commercial artist who has a build like a fireplug and the drive of a ram-jet speedster, has herded hundreds of Denver's artists into something called Artists, Inc. Every specialized branch of commercial art has its own council within the larger group.

Artists who had been deadly rivals for years now are not only on speaking terms but are throwing their energies into a well-heeled program to sell the West to the world by means of the West's best graphic arts presentations. In addition, Artists, Inc., will make it increasingly hot for those Colorado firms who send to middle-west and eastern cities for artwork.

Matt Falk is art director of an up-and-coming advertising agency of the mountain states, Arthur G. Rippey & Co. The roster of Artists, Inc., is a Who's Who of the top artists, photographers, designers, and art directors of the area and every one of them is dedicated to the idea of a "Rocky Mountain Renaissance" in which the graphic arts will play no mean role.

#### State Engineers Protest

There is too much of the silly business of shipping the West's raw materials somewhere else for manufacturing and then bringing the finished products back to the West to be purchased and used. So say the state engineers of the 17 western

states, who recently spent three days in Wyoming's beautiful Jackson Hole country on what purported to be a "strictly business" convention.

Strange how many organizations, mostly business groups, are finding that they need a mid-summer conference or convention that best can be held somewhere in the secluded mountain valley where beautiful Jackson Lake and spectacular Tetons provide breath-taking scenery.

Anyhow, the engineers know as much about the resources of their respective states as anyone else knows. Moreover, they happen to be in position to do something about developing those industries.

Up to now, the engineers have concerned themselves mostly with interstate water problems and matters having to do with reclamation projects, on which most can qualify as experts. Just what they will do about fostering manufacturing and processing enterprises in the Western states remains to be seen.

Mark R. Kulp, Idaho's state engineer, was elected president of the regional association. Before they went back to their home states, the state officials framed a strongly-worded resolution telling the U. S. Army engineers to be more respectful of state laws pertaining to the ownership, control, administration and use of waters of the Western states.

Federal laws to compel such compliance will be sought, since the state engineers

don't expect the Army engineers to pay any attention to their resolution, even if it is a stern one.

#### Weather, Inc.

When Mark Twain complained that everybody talked about the weather but nobody ever does anything about it, he didn't know about the coronascope that turns its glass eye constantly at the sun from a 12,000 foot mountain top near Climax, Colorado. And he didn't even suspect the enterprise that lurks in the scientific soul of the young astronomer who runs the High Altitude Observatory of Harvard University and the University of Colorado. Walter Orr Roberts is his name.

Dr. Roberts looks and talks like any of the young fellows who stormed the island fortresses of the Japs and the strongholds of the German Nazis. But Dr. Roberts' then super-secret work for all the fighting forces of the United Nations has evolved into a peacetime business that calls for an operating budget of \$100,000 a year.

Air lines, radio broadcasting systems, and a host of other enterprises that stand to make plenty of money—or lose it—depend on weather, whether or not. And nobody on earth knows half so much about the weather, especially the sort of weather that raises hell with radio reception, as the man who runs the hemisphere's only coronascope up there in the high country of Colorado.



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**HANDLING COSTS**



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HOISTS

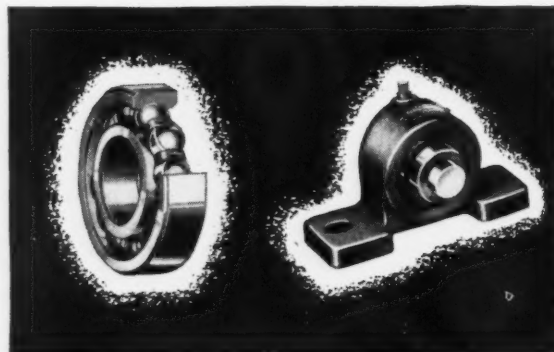
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RISES

FALL

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There's a Fafnir Distributor serving your trading area. The Fafnir Bearing Company, New Britain, Connecticut.

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Those enterprises are glad to pay for information that will save costly blunders, possible interruption of service, possibly save the lives of many travelers who are dependent upon radio beams and information received by radio—when it works. So one of Colorado's truly unique business is thriving, because it not only talks about the weather but does something about it.

What is a coronascope? Essentially, it is a telescope fitted with a gadget that blots out the sun, so that when you look at the sun you see only the fiery corona or outer rim with its great flames that sometimes shoot out into space terrific distances with upsetting effects on radio and heavens knows what else.

Sun spots also have their story to tell, to the men who have nothing to do but sun-gazing. Go up and have a look, sometime. Dr. Roberts and his wife and their three youngsters love to have company.

Of course you will have to get past the gate of the Climax Molybdenum Company, which is one of those firms that prefers to be surrounded day and night with armed guards. The Climax people generously provide the sight for the observatory and keep the roads open as long as there is any use trying, after which the Roberts get along fine without any company for days and days at a time.

But a visitor driving by can stop at the gate and telephone the observatory for permission to come up, which the Roberts usually supply gladly.

#### Bark-Beetle Blitz

**Killed:** Three billion board feet of Colorado's finest commercial timber, the Englemann Spruce.

**Threatened with early destruction:** Up to one-half of the commercial timber in Colorado and Wyoming.

The timber lost already in Colorado is enough to build a five-room house for every family in the state.

The murderer is the tiny beetle known officially as *dentroctonus engelmanni*, a native that always has preyed on trees slightly beyond their prime. The beetles bore into a live tree, and aided by their larvae, soon girdle the tree and cut off the flow of sap beneath its outer bark.

Many trees in the epidemic area are now being attacked by as many as 1,500 pairs of beetles. The great White River National Forest in northwestern Colorado has been turned into mile after mile of dead trees, and the ornerly little bugs having killed the Englemann spruce now are taking after the lodgepole pine. This should have brought up a jurisdictional dispute with the Black Hills beetle, which has been in the lodgepole pine business all along, but now they are both eating up the tall pines.

They are stealthy killers, these bugs, and have gone elsewhere long before the first discoloration appears on the fading

tops of dead trees, which are observable as "red tops" a year or so later. Consequently, methods of controlling the ravages of these murderous insects have been difficult to work out. The only good natural enemy of the bugs is the woodpecker, and right now Colorado could use a million of the biggest and toughest wood peckers anybody ever saw. West Coast papers please copy.

#### Frozen Vegetables

Broccoli displaced spinach this year for first place among quick-frozen vegetables packed in California in the winter season from September 15 to May 31. Statistics of the Western Frozen Food Processors

Association show that the volume jumped from 7,168,959 lbs. a year ago to 18,795,069 in the 1945-46 season, while spinach, totaling 9,280,076 lbs. in 1944-45, increased only to 10,882,239 lbs. Brussels sprouts took third place with 8,285,043 lbs. and cauliflower fourth with 7,020,937 lbs. A trend to the larger size packages in shelf sizes was apparent.

#### Metal Congress Resumed

The Western Metal Congress and Exposition, last held in Los Angeles in 1941, will have a postwar resumption in Oakland for the six days beginning March 22, 1947.

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Rockbestos manufactures the most complete assortment of heat resisting wires, cables and cords available. More than fifty standard wires to draw upon and a research department always ready to design a "special" if you need one.

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# LABOR

## AND THE INDUSTRIAL WEST

**A** PLEA for an overall wage reduction of 11 per cent by metal trades manufacturers on the Pacific Coast to bring the scale down to the level of the Great Lakes area, has been voiced by Eltinge T. Brown, manager of the Metal Trades Manufacturers Association of Southern California. This, he said, could only come through official action by regional offices of the Wage Stabilization Board.

He says, in a release entitled "Southern California Industrial Economy Threatened," that metal trades industries on the coast cannot continue to pay the highest wage rates in the country, and at the same time accept a deliberate slowdown of production if they hope to survive.

Comparative tables of wages from the Bureau of Labor Statistics were cited by Mr. Brown. These report the distribution of plant workers on a basis of percentage according to three groupings, viz., those

receiving less than \$1.00 per hour, those from \$1.00 to \$1.999 per hour, and those receiving \$2.00 and over. Here is the comparison:

	Percentage of Workers According to Range of Average Hourly Earnings		
	Entire Industry Per Cent Under \$1.00	By Regions Per Cent \$1.00- \$1.999	Per Cent \$2.00- Over
Southeast .....	76.8	23.2	....
Middle West .....	72.7	25.7	1.6
Mountain States .....	70.4	29.6	....
Southwest .....	65.5	34.5	....
Border States .....	64.9	34.8	.3
New England .....	58.0	41.4	.6
Middle Atlantic .....	57.6	39.4	3.0
Great Lakes .....	51.1	47.0	1.9
Pacific .....	24.5	74.5	1.0
United States .....	50.8	47.4	1.8

"Thus we find the metal trades industries on the Pacific Coast paying 74.5 per cent of their workers between \$1.00 and \$2.00 per hour; only 24.5 per cent are receiving less than \$1.00 per hour," he said.

"Yet the next highest area in the country—the Great Lakes States—shows only

(Mr. Brown began predicting last January that increasing labor costs in Los Angeles might put the area out of competition with the rest of the country. On the other hand, E. K. Young, industrial engineer of the Los Angeles Chamber of Commerce, took issue with this assertion in the June, 1946, issue of *WESTERN INDUSTRY*, pointing out that hourly costs were only one side of the picture, and before any Western manufacturer prepares to raise his hands in surrender, he should convince himself that his unit costs had been driven to a sound economic competitive minimum. Mr. Young cited several instances of greatly lowered costs through a study of efficiency methods.)

47.0 per cent of their workers receiving \$1.00 to \$2.00, and 51.1 per cent being paid less than \$1.00 per hour.

"Other competitive areas, i.e., the Middle Atlantic and the New England States, show 39.4 per cent and 41.4 per cent, respectively, as being from \$1.00 to \$2.00 per hour, with 57.6 per cent and 58.0 per cent falling less than \$1.00.

The Pacific Coast is 27.1 per cent higher than the average for the country in the number of workers receiving \$1.00 to \$2.00 per hour, and 26.3 per cent below the U. S. average for the number working for less than \$1.00 per hour. How can we compete unless the Coast brings itself at least into line with the next highest area?"

At the other end of the Coast, a three-party arbitration board, of which George Cheney was chairman and public member, with the Washington Metal Trades, Inc.



Wherever extremely accurate control of intermittent machine operation is essential the Hilliard Single Revolution Clutch is unequalled. Its accuracy has won for it the acceptance of Industry for cutting, punching and packaging operations.



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SEATTLE (4).....95 Connecticut St., Tel. Main 1207  
PORTLAND (9).....1238 N. W. Glisan St., Tel. Broadway 1281  
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MATERIALS - METHODS - SERVICE - FOR EVERY CLEANING REQUIREMENT





**Percentage Relationship — Pacific States to Other Regions  
By Average Hourly Earnings**

	Iron and Steel Foundries Pct	Ferrous Foundries Pct	Non- ferrous Foundries Pct	Fabri- cated Structural Steel Pct	Ma- chinery Pct	Machine Tool Access. Pct	Sheet Metal Pct	Average Entire Industry Pct
Southeast .....	+60.3	+47.4	+45.1	+50.7	.....	+98.5	+57.1	
Middle West.....	+28.2	+27.3	+36.8	+29.5	+75.9	+58.8	+37.5	
Southwest .....	+43.4	+38.3	+43.4	+25.3	+28.1	+53.4	+36.0	
Border States.....	+29.8	+19.1	+33.3	+39.0	.....	+10.6	+33.0	
Mountain States.....	+23.9	+33.3	.....	+22.6	.....	.....	+37.5	
New England.....	+19.1	+16.5	+9.8	+14.4	+22.6	+46.0	+26.2	+22.2
Middle Atlantic.....	+18.3	+10.1	+16.5	+20.2	+17.5	+46.0	+8.9	+18.6
Great Lakes .....	+5.3	+4.8	+4.7	+21.4	+14.0	+28.1	+36.4	+11.0
United States.....	+9.7	+9.0	+8.7	+22.7	+16.2	+35.2	+27.4	+15.2

and the International Association of Machinists as the interested parties, has brought the machinists' job classifications up to a level comparable with San Francisco, as follows:

	Minimum New Rate	Increase
Tool and Die Makers.....	\$1.81	41.5c
Journeyman Machinists (in- cluding Machinists Welders)	1.51	26
Specialists .....	1.31	25
Helpers .....	1.14	19

The majority decision said the issue was one of policy, not of fact, and that consideration had been given to wages in Seattle and other areas on the Pacific Coast, and that the new rates are still substantially below those being paid by Boeing.

the Seattle shipyards and some other large employers.

A vigorous dissent was entered by H. D. Hailey, industrial member of the arbitration board, and secretary of the Washington Metal Trades. He asserted that Mr. Cheney's statement that his decision rested on "policy" and not upon fact clearly violated the terms of the submission agreement. In view of the fact that the impartial arbitrator was designated by the U. S. Conciliation Service and had long been an employee of the Department of Labor, Mr. Hailey said it was only possible to conclude that "policy" meant governmental policy, which raised various questions of vital importance to everyone.



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- ⚡ **RISES FROM ONE FLOOR LEVEL TO ANOTHER**
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Consult American Engineers regarding the installation of a conveyor system to meet your manufacturing requirements.

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**COMPENSATE  
FOR  
MISALIGNMENT  
AND  
ABSORB SHOCK**

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## Arbitrator's Ruling On Veterans' Vacations

Reemployed veterans do not acquire vacation rights by virtue of their service in the armed forces if they are employed under a contract providing for working a specified number of hours before becoming eligible for vacations, under the arbitrator's ruling in the Berg Metals Corporation case in Los Angeles.

The arbitrator, George Cheney, formerly connected with the U. S. Conciliation Service, ruled as follows:

"Reemployed veterans who are not yet eligible for vacations under vacation eligibility provisions of parties' contract are not entitled to vacations by virtue of the Selective Training and Service Act since (1) the Act contains no express reference to vacations, (2) the seniority rights and standing which it preserves are not synonymous with vacation eligibility periods, and (3) instant employer has no past practice of granting vacations to employees on leave of absence such as might justify appeal to provision of Act entitling returned veterans to "insurance or other benefits offered by the employer pursuant to established rules and practices relating to employees on furlough or leave of absence..."

"Under contract providing paid vacations for employees 'who have worked at least 1,600 actual hours during 12 months of continuous employment,' reemployed veterans, even though they have several years' seniority, are not entitled to vacations until they have completed 1,600 actual hours of service within a span of 12 months of continuous employment by the employer preceding the expiration date of current contract. Vacation eligibility periods must be deemed to refer to spans of actual service and should not be confused with seniority standing, which may accumulate during leaves of absence."

## Court Ruling On Silicosis

The California Supreme Court handed down a decision dealing with the problem of compensating industrial disability caused by the disease of silicosis, popularly known as "miner's consumption" which apparently provides a new solution to a troublesome problem.

The case, known as Colonial Insurance Company vs. Industrial Accident Commission, was that of an employee who had worked for one employer for about 20 years. Throughout that period there was exposed silica dust in varying degrees. Also during that period the employer had changed insurance carriers on several occasions and during some intervals had been uninsured as to occupational disease.

When the employee became disabled from silicosis he applied for compensation and named the employer and all carriers as defendants. The Commission dismissed as to all but the last carrier and granted the

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employee full compensation, to be paid by the last carrier.

Under the state supreme court decision, the employee is given the election to seek compensation from one or all successive employers and their insurance carriers during whose employment exposure to silica dust contributed to the ultimate disability. The commission may then award compensation against any one or more of the defendants joined in the action.

This provides the employee prompt and full relief, since any dispute between the insurance carrier or employers, as to apportionment of liability among them, may not hold up the payment of compensation to the employee. Any dispute between the employers and insurance carriers must be settled in an independent proceeding.

#### **USES Minority Worker Policy**

A new field instruction in connection with service, policy, and procedures for U.S.E.S. in handling of job orders which "discriminate" against minority groups, provides that job orders which carry specifications concerning race, creed, color, and national origin will be received by U.S.E.S., but the employer will be informed that the best qualified worker will be selected and referred to him.

Selection of applicants for referral will be made without regard to "discriminatory" specification.

If the applicant selected by U.S.E.S. is a member of a minority group the employer will be notified and an interview for the applicant requested. If the employer refuses to change his specification the U.S.E.S. will insist that as a public agency it cannot refuse to refer any qualified worker. If the particular applicant concerned insists upon a referral it will be given to him in spite of the job order.

The U.S.E.S. personnel have been instructed to report "accurately and completely" all information regarding discriminatory practices together with the employer's statements concerning his specifications or his alleged discrimination, as well as a statement concerning the general hiring practices of the employer.

#### **Double Pay For Illness Disapproved**

The California Unemployment Compensation Appeals Board has removed provisions from the new disability insurance act which would permit workers to draw both regular wages and state compensation while away from work because of illness.

The "double pay" feature of the new act, which is scheduled to go into effect December 1, was protested by insurance companies and employers after temporary regulations governing payments were drawn up by the State Employment Stabilization Commission.

**DUST**



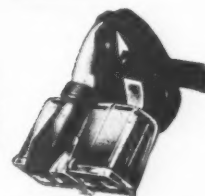
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# THE WESTERN OUTLOOK...NEWS...STATISTICS...

## THE PICTURE

Latest developments in the statistical picture of the West, compared to the month last reported, include the following:

Employment (Aug.), continued rise  
Freight (Sept.), highest this year  
Bank Deposits Aug., steady rise  
Bank Loans (Sept.), accelerated increase  
Dept. Store Sales Aug., California down  
Lumber (Sept.), up  
Oil (July), slight decline  
Iron and Steel Aug., down  
Copper (Aug.), sharp upturn  
Coal July, steady upgrade

## Bank Deposits

Steady rise, in both demand and time

(In millions of dollars—adjusted)  
(Excluding U. S. Gov't deposits, cash items in process of collection, and interbank deposits.) Daily avg. for month, all member banks in 12th Fed. Res. Dist.

	Demand Deposits	Time Deposits
May, 1946	\$8,121	\$5,399
June	8,275	5,453
July	8,374	5,542
August	8,397	6,992

## Bank Loans

Continued increase; pace accelerates with season

Industrial, commercial and agricultural  
(In millions of dollars)  
From reporting member banks of Fed. Res. System in 7 Western cities: L.A., S.F., Portland, Seattle, Tacoma, Spokane, Salt Lake.  
(Average of Wednesday reports)

	Total
May, 1946	\$662
June	686
July	740
August	811
September	896

## Freight

Car shortage effects indicated by decline in September tonnage

Cars of revenue freight, railroad carriers in 11 Western states.

(Compiled from Am. Assn. of R.R. weekly reports)

	Loadings	Eastern connections	Total
Aug., 1945	695,277	450,497	1,145,774
September	593,143	310,858	906,011
October	617,023	313,964	930,987
November	535,620	278,746	814,366
December	586,302	302,807	887,009
Jan. 1946	469,139	240,906	710,045
February	467,054	243,725	710,778
March	594,106	311,419	905,525
April	438,318	236,816	675,134
May	401,529	216,217	617,746
June	577,666	307,451	885,117
July	480,558	239,721	720,279
August	746,210	379,792	1,126,002
September	606,037	305,872	911,909

## Employment

Entire West's decline from July 1945, last full month of war production, totals 632,000. Mountain area lost only 23,200, coast states 39,000. July 1946 picture good, California going strong, mining on the up, Washington lumber mills slowed by log shortage.

Estimated Number of Employees in Non-Agricultural Establishments—In Thousands—Source: U. S. Bureau of Labor Statistics

MANUFACTURING													
	Montana	Idaho	Wyoming	Colorado	New Mexico	Arizona	Utah	Nevada	Total Mountain	Washington	Oregon	California	Total Pacific
July, 1945	23,900	17,600	5,300	59,000	8,600	23,200	25,100	2,600	165,300	262,100	161,800	887,000	1,313,900
July, 1946	15,200	18,600	5,800	51,600	9,300	12,300	26,500	2,800	142,100	158,900	121,000	685,000	974,900

## Index of Department Store Sales

West as a whole about 25 per cent above a year ago. California shows some declines in August from July; Eastern Washington, Utah, Idaho and Phoenix have sharp rise.

Index numbers, 1935-39 daily average=100 with seasonal adjustment. Compiled by Federal Reserve Bank.

	Total 12th Fed. Res. Dist.		Southern California		Northern California		Portland		Western Washington		Eastern Washington and northern Idaho		Utah and southern Idaho		Phoenix	
	1945	1946	1945	1946	1945	1946	1945	1946	1945	1946	1945	1946	1945	1946	1945	1946
July	258	322	261	336	244	292	234	303	310	367	216	290	254	331	304	381
August	231	324	251	330	212	288	211	301	275	364	232	325	257	364	324	444

## Wholesalers' Sales

April hardware and automotive supplies reflect early signs of peacetime production again, but electrical goods showed marked decline. Sharp increase is recorded in grocery sales. Dry goods & furnishings sales continue higher.

(In thousands of dollars. From Bureau of the Census)

	AUTOMOTIVE SUPPLIES		LUMBER & BLDG. MATERIALS		DRY GOODS		ELECTRICAL GOODS		FURN. & HOUSE FURNISHINGS		GROCERIES AND FOOD, EXCEPT FARM PRODUCTS		GENERAL HARDWARE	
	Mountain	Pacific	Mountain	Pacific	Mountain	Pacific	Mountain	Pacific	Mountain	Pacific	Mountain	Pacific	Mountain	Pacific
January	500	2,554	...	...	...	1,432	955	4,211	...	1,322	3,846	...	839	3,395
February	570	1,391	...	...	...	763	941	4,018	...	1,150	2,474	5,913	761	1,723
March	703	1,712	...	...	...	1,548	1,002	4,413	316	1,275	3,804	9,042	1,121	1,928
April	829	2,766	745	1,109	...	1,672	1,092	3,628	317	1,537	3,932	13,869	926	5,287

## Fabricated Metal Products—Shipments

June figures show \$10,332,000 drop from May, continuing decline from April peak. Sharpest fall in Washington. Colorado only area to gain appreciably in June over May.

(In thousands of dollars. From Bureau of the Census)

	Los Angeles County	San Diego County	S.F.-Oakland*	All other counties	Total California	COLORADO	OREGON	WASHINGTON	GRAND TOTAL
January 1946	43,621	2,029	16,627	2,214	64,491	6,062	7,247	23,231	101,631
February	53,590	1,656	13,788	2,121	71,155	6,633	6,238	19,433	103,459
March	59,447	1,924	16,076	2,299	79,746	2,658	7,554	33,482	123,440
April	67,861	1,416	24,675	3,489	97,441	1,985	5,546	34,741	139,713
May	61,321	1,390	30,168	3,059	95,938	2,444	6,614	17,388	122,384
June	58,329	1,476	28,932	3,061	91,798	2,671	5,429	12,151	112,632

\*Includes the following counties: Alameda, Contra Costa, Marin, San Francisco, San Joaquin, San Mateo, and Santa Clara.

## Electric Energy

Reflects general upswing, particularly in commercial and residential use. Most Western utilities expect peak by next December approximating wartime levels. Reopening of aluminum plants will help.

—(Production for Public Use—In thousands of kilowatt hours. Source: Federal Power Commission)

	MONTANA		IDAHO		WYOMING		COLORADO		NEW MEXICO		ARIZONA		UTAH	
	1945	1946	1945	1946	1945	1946	1945	1946	1945	1946	1945	1946	1945	1946
Jan.	206,308	214,953	93,231	103,388	22,209	18,062	97,960	99,255	44,440	42,252	330,526	248,064	37,908	29,349
Feb.	188,781	189,753	84,619	91,733	18,385	19,945	87,980	86,169	40,066	42,985	297,242	250,759	29,773	29,953
Mar.	195,818	190,177	95,634	100,945	19,135	21,478	98,484	91,372	44,741	43,422	295,689	261,440	32,387	39,810
April	189,951	151,245	108,446	95,160	19,636	21,434	91,413	92,179	45,024	40,740	260,694	291,203	38,449	46,057
May	178,987	176,298	115,524	113,529	22,309	29,058	94,597	90,733	44,350	43,505	277,722	289,657	40,783	44,675
June	168,264	187,668	107,417	115,140	24,173	30,491	91,789	88,581	49,116	50,136	295,584	254,511	41,936	34,810
July	188,034	221,069	123,204	124,204	24,933	30,715	90,264	97,764	50,177	56,702	261,135	238,087	28,101	32,573
Aug.	192,472	206,954	115,684	130,691	23,804	36,445	86,660	102,737	52,503	61,113	273,296	210,223	29,237	37,414

	NEVADA		TOTAL MTN.		WASHINGTON		OREGON		CALIFORNIA		TOTAL PACIFIC	
	1945	1946	1945	1946	1945	1946	1945	1946	1945	1946	1945	1946
Jan.	234,315	247,675	1,066,897	899,099	954,958	745,231	331,980	304,091	1,259,968	1,632,828	2,546,906	2,682,150
Feb.	206,485	239,069	953,331	950,366	868,143	668,234	295,324	299,660	1,122,227	1,108,091	2,285,694	2,075,985
Mar.	279,405	229,264	1,061,291	976,658	953,643	732,218	366,037	304,367	1,244,797	1,333,305	2,564,477	2,356,671
April	225,369	155,875	975,982	893,839	853,860	685,080	393,408	297,314	1,297,580	1,374,077	2,544,848	2,369,890
May	231,922	183,231	1,001,194	970,231	855,407	685,643	385,759	306,834	1,434,904	1,467,309	2,676,070	2,459,786
June	207,115	195,396	983,394	956,428	785,238	674,469	379,702	294,064	1,413,023	1,480,340	2,577,963	2,448,073
July	191,872	203,895	966,946	1,005,009	789,255	692,300	390,411	308,653	1,589,111	1,628,605	2,768,777	2,629,558
Aug.	191,899	194,754	975,655	980,351	748,569	703,050	424,015	384,049	1,536,701	1,700,109	2,709,285	2,788,168



# FROM THE RESEARCH DIVISION OF WESTERN INDUSTRY

## Coal—Bituminous and Lignite

July Western production 342,000 tons behind 1945, but on steady upgrade. Mines in Wyoming, the leading producer, were working 800 less people. Utah had good gain in July over 1945. Total Western production less.

(Thousands of tons mined, From U. S. Bureau of Mines)

	MONTANA		WYOMING		COLORADO		NEW MEXICO		UTAH		WASH.		OTHER WEST. STS.		ALASKA		TOTAL WESTERN	
	1945	1946	1945	1946	1945	1946	1945	1946	1945	1946	1945	1946	1945	1946	1945	1946	1945	1946
April	330	176	696	25	568	20	112	5	532	14	111	10	*	1	26	28	2,375	279
May	356	233	792	362	520	243	118	65	543	248	108	22	*	1	22	33	2,459	1,207
June	366	300	787	444	522	382	118	121	540	472	107	95	*	1	33	23	2,473	1,838
July	354	293	773	615	504	352	120	112	510	348	96	88	*	1	20	26	2,377	2,035

\*Figures not available.

## Wheat Flour

Seattle-Tacoma area production dropped sharply in July, also Oregon and Montana. California and Oregon pick up some ground. Total Western output down about one-sixth. July probably the low in flour production. Wheat will come in steadily from now on.

	WASHINGTON		OREGON		CALIFORNIA		COLORADO		MONTANA		UTAH		IDAHO		TOTAL	
Month	Mills Report'g	Flour	Mills Report'g	Flour	Mills Report'g	Flour	Mills Report'g	Flour	Mills Report'g	Flour	Mills Report'g	Flour	Mills Report'g	Flour	Mills Report'g	Flour
April	16	1,011	15	555	9	218	18	367	15	356	22	218	14	204	109	2,959
May	17	1,073	15	551	9	276	18	372	15	355	22	200	14	179	110	3,006
June	16	1,134	15	621	10	244	18	236	15	337	22	261	14	185	110	3,018
July	16	739	15	376	10	370	13	378	15	299	22	276	15	130	106	2,549

## Soft Plywood

"Premium payments" build up log stocks

Source: U. S. Bureau of Census

Production, thous. of sq. ft.  $\frac{3}{8}$ " basis.

	1945	1946
June	121,283	121,412
July	85,579	95,747
August	113,633	124,508

## Pulpwood

Record-breaking receipts also paper and board production

(Pacific Northwest)

(Cords of 128 cu. ft., roughwood basis.)

Source: Bureau of Census

	Receipts	Consumption
May, 1946	345,049	229,553
June	426,000	245,705
July	469,472	281,768
August	542,684	359,501

## Iron and Steel

Steady increase in pig iron production.

Pig iron and steel production for the Western area of the United States are reported by the American Iron and Steel Institute in net tons as follows:

Pig Iron:	Current Month	Percent of capacity	Year to date	Percent of capacity
Jan., 1946	83,979	34.9	83,979	34.9
February	40,365	18.6	124,342	27.1
March	107,605	44.7	231,947	33.2
April	85,270	35.7	315,217	33.8
May	84,799	35.2	400,016	34.1
June	104,808	44.9	509,179	36.2

Alloy Steel:

	Current Month	Percent of capacity	Year to date	Percent of capacity
August 1945	1,531	—	29,645	—
September	4,517	—	34,162	—
October	3,966	—	40,128	—
November	9,078	—	49,206	—
December	4,398	—	52,348	—
Jan., 1946	4,463	—	4,463	—
February	4,909	—	9,372	—
March	6,026	—	15,398	—
April	2,894	—	18,292	—
May	2,548	—	20,840	—
June	1,992	—	22,832	—

Carbon Ingots, Hot Topped:

	Current Month	Percent of capacity	Year to date	Percent of capacity
October	8,442	—	319,095	—
November	6,049	—	325,144	—
December	8,379	—	333,523	—
Jan., 1946	3,170	—	3,170	—
February	4,317	—	7,487	—
March	4,287	—	11,774	—
April	3,952	—	17,726	—
May	6,499	—	24,225	—
June	6,284	—	30,509	—

Steel Total:	Current Month	Percent of capacity	Year to date	Percent of capacity
October	223,796	53.6	3,059,970	74.8
November	210,866	52.2	3,270,836	72.7
December	218,569	52.5	3,489,405	71.0
Jan., 1946	172,348	41.4	172,348	41.4
February	81,680	21.8	254,028	32.1
March	248,615	59.8	502,643	41.6
April	241,034	59.9	743,697	46.2
May	237,759	57.2	981,456	48.4
June	248,378	61.7	1,229,834	50.6

\*Included in total steel.

## Copper

Sharp upturn in Arizona and Utah shows surprising recovery from strike period. Drop in Nevada due to decrease at Kennecott, Consolidated and Coppermine.

(Short tons, From U. S. Bureau of Mines)

	ARIZONA		UTAH		MONTANA		NEW MEXICO		NEVADA		TOTAL U. S. WESTERN STATES	
	1945	1946	1945	1946	1945	1946	1945	1946	1945	1946	1945	1946
January	25,371	25,300	19,692	11,000	9,003	6,050	*	*	*	*	67,707	52,046
February	25,619	24,300	18,269	500	8,090	5,100	*	*	*	*	64,572	38,822
March	26,239	22,300	19,548	650	8,929	5,300	*	*	*	*	70,850	38,075
April	25,425	16,400	19,807	500	7,540	1,700	*	4,287	*	4,800	63,966	28,513
May	26,000	16,350	20,900	500	8,613	4,800	*	3,906	*	4,350	65,235	30,682
June	24,110	15,800	19,771	400	8,218	4,700	*	3,993	*	4,675	64,201	30,643
July†	22,055	25,700	19,826	12,350	6,651	4,750	*	4,404	*	2,100	57,176	50,303

\*Included in total.

†Preliminary figures.

## Lumber

Great increase in July. Over 50 pct. going into housing lumber.

(In thousands of board feet)

From West Coast Lumbermen's Association (Douglas Fir, Sitka Spruce, Port Orford Cedar, West Coast Hemlock, Western Red Cedar):

	1944	1945	1946
Year through September	6,027,455	4,970,425	4,430,103

From Western Pine Association figures (Idaho White Pine, Ponderosa, Sugar Pine and associated species):

	1945	1946
Year through Sept.	2,336,145	2,125,034

## Oil

Production slightly down in July, though still somewhat above low in April figures.

(Petroleum Economics Div., U. S. Bureau of Mines)

Total average amount delivered daily by oil companies in the area, including all deliveries to the federal government, offshore shipments and transportation and other losses. All products 1000's bbls.

	1945	1946
January	1,066,000	917,000
February	1,124,000	947,000
March	1,068,000	962,000
April	1,148,000	851,000
May	1,133,000	864,000
June	1,085,000	871,000
July	1,066,000	859,000

## Cement

All Western production on upgrade, especially Ore. and Wash.

(In thousands of bbls.; from U. S. Bureau of Mines)

	—California—		Oregon-Wash.		Utah-Idaho	
	1945	1946	1945	1946	1945	1946
Jan.	1,258	1,159	269	234	173	233
Feb.	1,191	1,355	243	250	95	109
Mar.	1,226	1,629	250	298	122	245
April	1,257	1,670	268	432	130	356
May	1,396	1,745	238	397	273	413
June	1,439	1,684	303	437	305	386
July	1,538	1,690	278	504	317	391

## Apparel

California's production becomes increasingly important factor

Women's, Misses' and Juniors' Outerwear

	Los Angeles	San Francisco
5 weeks ending		
May 4, 1946	\$11,681	\$2,885
4 wks. ending June 1	9,192	1,969

Women's and Misses' Blouses

5 weeks ending		
May 4, 1946	\$1,654	\$ 62
4 wks. ending June 1	1,399	53

Women's and Misses' Coats (except fur), Spits and Skirts

5 weeks ending		
May 4, 1946	\$ 4,316	\$2,146
4 wks. ending June 1	3,062	1,315

Misc.  
Women's & Misses' Unit  
Price Dresses  
(Los Angeles) (San Fran'co)

5 weeks ending		
May 4, 1946	\$ 3,611	\$1,400
4 wks. ending June 1	2,836	1,285

## THE TREND

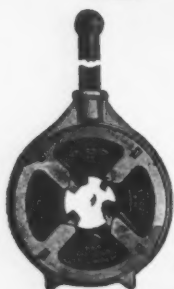
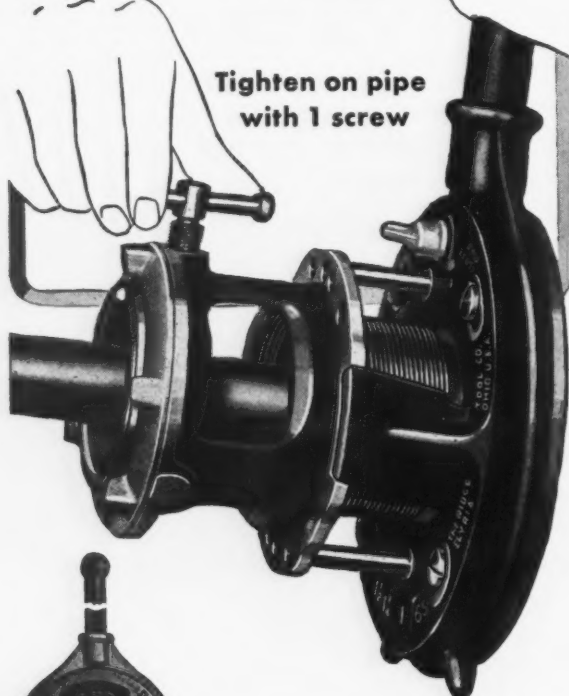
Production in almost every line has continued on the upgrade. Notable exception is fabricated metal products, which show the effects of the nationwide steel shortage. Figures on wood products, nonferrous metals, carloadings, employment, department store sales, bank deposits and bank loans as reported in this department are climbing. Some lumber mills forced to reduce output for inability to get sufficient logs. Except for maritime occupations and redwood lumber mills, where strikes have been in progress, no great labor problem is being battled over.

**You save  
time and work  
when you thread  
pipe with this**

**RIDGID**

**No. 65R**

**Tighten on pipe  
with 1 screw**



*It stands up handily on its own feet.*

● Threading 1" to 2" pipe is no chore at all with the self-contained quickly adjusted No. 65R threader. Its high-speed steel chasers set to size in 10 seconds — no loose dies to bother with or lose. Workholder sets to pipe size instantly — no bushings, only one screw to tighten on pipe. And you cut smooth perfect threads with the least possible effort. See for yourself why it's so popular — ask for this time and work-saver No. 65R threader at your Supply House.

**RIDGID**

**WORK-SAVER PIPE TOOLS**  
THE RIDGE TOOL COMPANY • ELYRIA, OHIO, U. S. A.

## THE WEST ON ITS WAY

### ARIZONA

**NEW GRAIN ELEVATOR**—Allied Grain Co. will erect a 6,000-ton grain elevator on South 24th Avenue, Phoenix, at a cost of \$90,000.

**NEW FURNITURE FACTORY**—Coronado Furniture Co., formerly Wood Products Mfg. Co., has let the contract for a \$200,000 factory building at 959 E. Jackson Street, Phoenix.

**REYNOLDS READYING PHOENIX PLANT**—Reynolds Metals Company has started readying its Phoenix aluminum extrusion plant for production. More than 1,500 persons will be employed when top production is reached, in approximately six months.

**MAGMA EXPANDING**—Magma Copper Co. has increased its capital stock and will use the additional capital to finance development of a large deposit of copper ore near Tiger, Pinal County, owned by the San Manuel Copper Corp., a subsidiary of Magma. Grant R. Rubly is resident engineer in charge of the development program. H. I. Ashby is asst. resident engineer. The deposit is thought to be one of the most important discovered in many years.

**ANACONDA BUYS COPPER MINE FOR FIVE MILLION**—Anaconda Copper Co. has bought the Van Dyke Copper Co., Miami, for \$5,000,000. It is presumed that the Van Dyke group will be merged with Inspiration Consolidated Copper Co., in which Anaconda holds a large interest. Claims adjoin the Inspiration and Miami mines.

**WHITE HILLS MINE LEASED**—Bert Larson, Kenneth Hall and Jess Layton of Chloride have taken a long lease on the White Hills mine, 30 miles north of Chloride, and plan working the gold-silver producer by modern methods and processes.

### CALIFORNIA

**TRIANGLE PACKAGE MACHINERY BUYS RAPP MANUFACTURING**—The Triangle Package Machinery Co. of Chicago, has purchased the Rapp Manufacturing Co. of Los Angeles, and will manufacture its complete line of Triangle Elec-Tri-Pak weighers and fillers as well as the Rappid-Filler, at the West Coast installation. Company will operate Triangle Package Machinery Co. and will continue in same location, 1501 West Jefferson Blvd., Los Angeles.

**EGGO FOOD REBUILDING**—Construction of new 1-story and balcony steel and brick factory building 100 ft. square to replace building destroyed by fire has commenced for Eggo Food Products Company, 153 W. Julian Street, San Jose. Project will cost \$100,000.

**PACIFIC TELEPHONE & TELEGRAPH EXPANDING**—Additional P.T.&T. facilities to cost approximately \$400,000,000, are planned. Expenditure will cover expenditures on the Pacific Coast for new buildings, central office equipment, cables and lines for telephone service.

**THREE NEW INDUSTRIES TO LOCATE IN SAN JOSE**—Stauffer Chemical Co. will build an agricultural research laboratory on a five-acre site on Fremont Avenue in the Mountain View area. Dr. Charles Pershing, formerly of UCLA Research lab. will head plant. . . The Shamrock Industries will locate 9 miles north of San Jose for manufacture of paper towels, paper napkins, and other paper articles. . . Free Bros., Inc., will manufacture Free's Dog and Cat Food at 474 Auzerai Avenue.

**ADRIAN MANUFACTURING BUILDING NEW PLANT**—Work will start soon on the Adrian Manufacturing Company plant on a 4-acre tract at Phelan Ave. and S. Seventh Street, San Jose. Construction is of 1-story welded steel, 50 x 235 ft., and will cost from \$50,000-\$100,000. Concern is now operating at 1855 S. First Street, San Jose.

**STUDIO BUILDING STARTED**—Construction of a 1-story frame and stucco studio building containing 20,000 sq. ft. of floor space and costing \$164,920, has started at The Alameda at Davis Street, San Jose, for Gousha Company, Chicago, road map makers.

**KEY SYSTEM PLANS NEW MOTOR COACH HEADQUARTERS**—Key System, 1106 Broadway, Oakland, plans construction of a masonry and steel motor coach headquarters with capacity of 250 motor coaches to include offices, shops, service pits, automatic wash racks, parts rooms, locker rooms, etc.

**OLIVE CANNING PLANT**—Strathmore Ripe Olive Company, 600 N. Mt. Vernon Ave., Lindsay, has started work on its new olive canning and processing plant on a site south of Maselli Olive Oil plant at Strathmore.

**CITRUS PROCESSING PLANT**—TreeSweet Products Co., 1944 E. 4th Street, Santa Ana, plans construction of a \$100,000 citrus processing plant.

**MOTHER'S CAKE & COOKIE CO. PLAN EXPANSION**—Engineering construction plans for a \$500,000 plant for Mother's Cake & Cookie Co. at San Leandro St. and 81st Ave., Oakland, are being prepared by the firm of Indenco, Oakland. It will contain about 100,000 square feet of floor space.

**MAAS & WALDSTEIN CO. BUYS SMITH-DAVIS PAINT CO.**—Maas & Waldstein Co., Newark, N. J., manufacturers of specialized production finishes, have purchased the Smith-Davis Paint Co., 10751 Venice Boulevard, Los Angeles, and will continue to manufacture industrial finishes, trade sales and maintenance sales paints. C. R. Parry, Pacific Coast divisional manager for many years with M & W, will supervise the new plant and will move his present office and the company's warehouse to the Venice Boulevard address.

**NEW SAN DIEGO INDUSTRIES**—Balboa Wood Products Company, 3045 Moore Street, is engaged in mill production of doors, will expand into cabinet making later. C.H. & N. Pattern Shop, 1260 Kettner Boulevard (former site of Barth Foundry), with three active partners, C. C. Clark, M. L. Huston and D. V. Noble, will produce wood, metal and plastic patterns. French, Hermes & Thomas, Inc., now located at 726 - 9th Avenue while awaiting remodeling of factory building at Madrona and Landis Streets, Chula Vista, are manufacturing heating, refrigeration and frozen food locker equipment. Moby Dick Boats, Solana Beach, is producing plywood craft in a newly constructed concrete block building located on Highway 101. Race Plating Company, 432 F St., specializes in gold and silver plating of jewelry and silver plating of aircraft parts. San Diego Overhead Garage Door Company, Howard T. Payne and D. Kurtz Heiny, partners, is operating at 3045 Moore Street. San Diego Stucco Company, 3167 Commercial Street, is now in production. Thurman Brothers Concrete Products, Mission Valley road and Texas Street extension, is majoring in the manufacture of concrete building blocks.

**POULSEN & NARDON TAKE OVER BOBBI MOTOR PLANT**—Poulsen & Nardon, Inc., manufacturers of Roy Chief aluminum ware, have purchased from the Bobbi Motor Car Corp. the latter's plant in a San Diego suburb. The plant will manufacture bed and desk lamps, scooters, wagons and electric heaters. Production is scheduled for November. John Marshall is San Diego resident manager. Bobbi Motor Car is transferring activities to Birmingham, Ala.

**BODIE SLATED FOR NEW PLANT AT SIERRA MINES**—Sierra Mines will build a reduction plant at Bodie to replace the Rosecliff mill, destroyed by fire four months ago. The new plant will have a capacity of 500 to 600 tons of ore daily. Sierra Mines, subsidiary of American Goldfields Development Co., controls Standard Consolidated and other historic Bodie silver-gold properties. The company has been developing ore bodies near surface for several months.

**MONTROSE CHEMICAL TO BUILD WESTERN PLANT**—Montrose Chemical Co. plans expansion on the West Coast. The new affiliate will be known as the Montrose Chemical Corporation of California, with its plant at Los Angeles. Its entire capacity will be devoted to the manufacture of technical DDT for use by insecticides manufacturers. P. Rothberg has been elected president and general manager of Montrose Chemical Corporation of California and his associate, S. Rotrosen, is secretary and treasurer.

**BYRON JACKSON BUYS NORTHERN UNIT**—Byron Jackson Co. has purchased Butte Pump & Motor Works of Chico, Calif., which will provide service and repair facilities and an organization to service Northern California and Southern Oregon. In addition to acting as a dealer for Byron Jackson, its business consisted of electrical maintenance, appliance sales, etc. It will be expanded and operated as a division of Byron Jackson.

**HUNT FOOD CONSOLIDATES**—Hunt Foods, Inc., has dissolved three of its subsidiary companies and has taken over their business as of July 1. The subsidiaries are the Fontana Food Products Co., South San Francisco; Knight Packing Co., which sometimes did business under the name of Pacific Packing Co., Oakdale, and Pacific Conserving Co., Scappoose, Ore. The plants will continue to produce, but packing will be under the Hunt label.

**AIRWAY RADIO**—Hoffman Radio Corp., Los Angeles, will design and produce a large order of carrier drivers and carrier modulators for the new VHF omni-directional radio ranges, developed by the Civil Aeronautics Administration for airways. Hoffman already is in production on oscillator-keyer units for the same type of installations.

**PG&E TO SPEND \$160,000,000**—The Pacific Gas & Electric Co. announces a \$160,000,000 construction and improvement program, largest in the company's history, to be completed by the end of 1946.

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a repair-free  
housing ...



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6" TO 60"**

● You get more for your money with **RIGID** pipe wrenches. That special design housings simply won't

warp or break in any normal use, however strenuous—as millions of users know. No laid up for housing repairs, no bother and expense. No binding of adjusting nut—it spins easily to size. Alloy jaws take hold and let go instantly. Handy pipe scale on hookjaw, comfort-grip I-beam handle. A wrench it's a pleasure to work with—ask your Supply House.

**RIGID** Compound Leverage Wrench.

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Here are ten main features to help you judge how well the Johnson bandsaw can serve you . . .

1. **Large Capacity:** 10" High x 18" Wide. Cuts small and large diameter stock — smoothly, evenly.
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3. **Rigid Box-Type Frame:** No wearing through friction. Oversize bearings and shafts throughout. Blade tension is uniform. Guides are wide — stay adjusted.
4. **Bed is Wide and Deep:** Accurately machined — all component parts work from common machined surface. Upper frame moves on large pivot bar through bed.
5. **Quick Acting Vise:** A time saver — takes a moment to lock workpiece in place.
6. **Hydraulically Controlled:** Frame descends gently on oil cushion. Hydraulically stopped at any height.
7. **Four Speeds:** 35, 90, 130, 190 feet per minute. You are sure of the correct speed for best results and fastest production.
8. **Centralized Controls:** No needless steps — all operated from front of machine.
9. **Long Blade:** 11' 5" long. Never heats. Most economical length to buy.
10. **Portable:** Self-contained. Plug in anywhere. Casters available.



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**FOR SERVICE**



## DRAKE STEEL SUPPLY CO.

STEEL WAREHOUSE DISTRIBUTORS  
in Los Angeles - Fresno, California, Tucson, Arizona

## THE WEST ON ITS WAY

**BIG LOS ANGELES EXPANSIONS**—Fernstrom Paper Mills, 1450 Holt Ave., Pomona, will double its production capacity by adding a \$350,000 building, with new equipment to cost \$900,000. Company makes fruit wrapping, tissue and waxed paper, and will add semi-crepe napkins and other specialty paper. . . . Pacific Press, Inc., 3440 S. Hope St., is starting construction of a plant at Fruitland Ave. and Soto St., to contain 200,000 sq. ft. . . . Haas Baruch & Co., 421 E. 2nd St., has purchased over 12 acres at 4700 Boyle Ave., where a food processing plant will be erected to contain 60,000 sq. ft. At a later date offices and warehouse will be constructed. Investment is expected to be around \$980,000. . . . Bemis Paper Bag Co., 800 E. D St., Wilmington, plans to build at the southwest corner of State and Sanford Ave., Wilmington. Estimated cost is around \$400,000 for expanded production of heavy-duty paper bags. . . . Fred S. Renaud & Co., 1014 W. 84th Pl., has purchased 3 acres on South Broadway at 190th St., where a 45,000 sq. ft. plant will be constructed for manufacture of water softening equipment, evaporative distillers, heat exchangers, boilers for steam power plants, etc.

**MORE EXPANSIONS IN LOS ANGELES**—Press-Telegram Publishing Co., 6th St. and Pine Ave., Long Beach, plans to construct a 4-story addition to its plant to cost around \$150,000. . . . Virtue Bros. Mfg. Co., 5701 W. Century Blvd., manufacturer of chrome dinette and household furniture, has begun construction of a warehouse and factory building to contain 50,000 square feet, affording a total of 130,000 square feet on an 8½-acre tract. The cost will be approximately \$150,000. . . . California Metal Enameling Company, 2131 E. 51st Street, is constructing a new plant at 6650 E. Slauson Ave., to which location company will move about the first of the year. 50,000 sq. ft. will be available. . . . Herco Co., 2605 E. 26th St., is building a foundry at 5335 Southern Ave., South Gate, where it will move upon completion. Building will contain 27,000 sq. ft. for production of soil and drainage pipe fittings. . . . Robert Smith Mfg. Co., Inc., 1366 W. 24th St., has purchased a site facing on Santa Anita Ave., San Gabriel, where a 2-story plant will be erected to contain 27,000 sq. ft. The new plant will feature a research laboratory for the development of specialized products in the cosmetic and detergent fields. . . . Universal Refrigerator Co., 1854 S. Western Ave., Los Angeles, has broken ground in the 500 block on North Eucalyptus St., Inglewood, for the first unit of a new plant which will contain around 30,000 sq. ft. of floor area. Company makes a deep-freeze unit called the "Freezmaster." . . . H & L Co., 2314 Laura Ave., Huntington Park, will construct a plant on Greenwood Ave., Montebello, to contain 26,000 sq. ft. Company makes heavy-duty teeth for shovels, rooters and scarifiers. . . . K. C. Working Chemical Co., 5021 District Blvd., will erect a 22,000 sq. ft. plant at 6251 Paramount Blvd., Long Beach, to which location it will move about January 1st. Company makes packaged household soap. . . . American Metal Products Co., 2310 Griffith Blvd., has acquired 1.5 acres at 2915 Compton Ave. and will construct the first unit of a plant to be ready for occupancy about the first of the year. Building will contain 20,000 sq. ft. for production of sheet metal plumbing and heating supplies.

**MORE LOS ANGELES EXPANSIONS**—Steamaster Automatic Boiler Co., 5819 S. Compton Ave., 18,000 sq. ft. addition. . . . Peerless Furniture Mfg. Co., Inc., in new plant at 1931 E. 65th St., manufacture of modern living-room furniture. . . . Fluor Corp., Ltd., 2500 S. Atlantic Blvd., 2-story office building containing 11,000 sq. ft.; company manufactures oil well equipment, etc. . . . Hollywood Mfg. & Dist. Co., 8560 W. Pico Blvd., is constructing new plant at 8506 Warner Dr., Culver City, where it makes textile novelties. . . . Luxor Upholstering Co. now at 241 W. 116th Pl. for manufacture of upholstered furniture. . . . Claysmiths, Inc., Pasadena, plan erection of 10,000 sq. ft. building on South San Gabriel Blvd., San Gabriel, for increased manufacture of ceramics and allied products. . . . Harbor Furniture Mfg. Co., 12508 Center St., Hollywood, will construct 10,000 sq. ft. addition for increased production of maple bedroom furniture.

**MORE INDUSTRIES FOR SANTA CLARA COUNTY**—The West Coast plant of an Eastern concern will locate in Gilroy at 80 Railroad St. The corporation will manufacture welded steel products, specialize in fans and blowers of all types. . . . Robin and Thomas, Inc., a drug manufacturing concern, will locate on the El Camino Real in Mountain View and produce ointments, capsules, etc., from mineral formulas. . . . Arrow Development Co. at 243 Moffett Blvd., Mountain View, does basic machine shop work, and specializes in product development and light manufacturing. . . . McIntyre Plastics located at 300 Moffett Blvd., Mountain View, produces all kinds of plastic pieces for display purposes. . . . Peart Planing Mill, Inc., located on the Phelan tract in San Jose; work consists of sawing and planing lumber to order. . . . San Jose Electrotype Co., located at 648 South First St. in San Jose, will produce electrotypes, stereotypes, and matrices for advertising and printing purposes.

**MCCOLLS GETS GO AHEAD**—McColls, Redding, has been granted CPA permission to construct a \$150,000 milk processing plant at Redding.



**TEXTILE PRINTING**—Bibo Castle Corp. has been granted CPA permission to build a \$65,000 textile printing plant at Santa Clara.

**NEW PHILIPPINE SHIPYARDS**—Philippine Consolidated Shipyards has been formed to engage initially in ship repair operations in the Philippines and the Far East. Alden G. Roach, president of Consolidated Steel Corp., is also pres. of the new firm. It will not engage in business in the United States. Others in the project are Philippine Industrial Equipment Co., an affiliate of Industrial Equipment Co., which is controlled by S. D. Bechtel, K. K. Bechtel, and John A. McCone; Morrison-Knudsen Company, Inc., K. D. Dawson, Andres Soriano, and other interests in San Francisco and Manila. Operations have begun at Manicani Island, off the coast of Samar. Existing drydocks and facilities will be utilized and expanded as conditions require. Field operations will be under direction of C. W. Lee, general manager, and George S. Colley. Lee is a Consolidated Steel man and Colley is v.p. of Philippine Industrial Equipment Co.

**NEW INDUSTRIES IN LOS ANGELES—THE WHO, WHERE AND WHAT THEY MAKE**—Louis Milani Foods, Inc. (Chicago), 6058 S. Waiker Ave., food products—dehydrated soups, canned specialties. . . . General Panel Corp., 5335 Southern Ave. South Gate, has purchased Lockheed plant in Burbank for construction of panel-type prefabricated structures. . . . Andersen-Carlson Mfg. Co., 1739-213th St., Torrance, to manufacture thin-wall electric metallic tubing, beginning in January. . . . Casual Craft Co., Chicago, 860 S. Los Angeles St., women's and misses' sportswear. . . . Chippendale Custom Upholsterers, 3534 Whittier Blvd., period and modern furniture. . . . Universal Cast Iron Fittings Mfg. Co., 3200 Bandini Blvd., will erect steel foundry. . . . Blackstone Homes, Inc., 11703 Wicks St., Roscoe, 5-acre site for production of complete homes, delivered in sections.

**MORE LOS ANGELES WHO, WHERE & WHAT THEY MAKE**—Wilbur Curtis Co., offices at 1719 W. 7th St., is constructing a plant at 1781 N. Indiana St., for manufacture of electric and gas stoves for coffee makers and other restaurant equipment. . . . R.M.F. Electric Co., 132 N. Bonnie Brae, steam irons for laundries, cleaners, and garment manufacturers. . . . Betty Hill of California, 860 S. Los Angeles St., women's coats and suits. . . . California Buff Mfg. Co., 3117 S. Arlington Ave., buffing and polishing wheels. . . . Harold Rhodes, Hollywood, Inc., 6917 McKinley Ave., desk-model practice pianos which weigh 16 pounds. . . . All Flex Mfg. Co., 1254 Bonita Ave., Asuza, swivel couplings for industrial use. . . . Minkoff of California, 407 E. Pico Blvd., ladies' coats and suits. . . . Consolidated Furniture Mfg. Co., 4328 San Fernando Rd., Glendale, bed davenport. . . . Miller Engineering Co., 855 Milford St., Glendale, aluminum castings. . . . Lang & Merritt Cabinet Shop, 126 N. Maxson Rd., El Monte, all types of cabinets. . . . Fontana of California, 407 E. Pico Blvd., women's and misses' coats. . . . Barwel Machine Co., 3729 1/2 San Fernando Rd., Glendale, metal polishing shop.

**BUILDING AT ROHR AIRCRAFT PURCHASED**—H. H. Johnson and Tavares Construction Company, Chula Vista, jointly have purchased three former Rohr Aircraft Corporation buildings from the War Assets Administration for \$42,500. Buildings are being converted into factory and storage space for prefabrication of veterans' homes. A total of 300 houses will be assembled for the Chula Vista Development Company, located at 289 1/2 Third Avenue. Thirty factory workers and 120 construction workers will be employed by the two concerns. . . . Kirk Brevity Corporation, with general offices at 310 "C" Street, San Diego, recently acquired 22,000 square feet of factory space, formerly the cafeteria building at Rohr Aircraft Corporation, Chula Vista. This space will be used for the manufacture of a patented shorthand recording machine. Currently the project employs 11 full-time workers; by next April it expects to increase its payroll to 100.

**NEW CONCERNS**—Corpac Manufacturing Company, 572 Marshall Avenue, El Cajon, an aluminum foundry, currently is pouring castings for a large leather concern, and producing pipe fittings for sprinkling systems. . . . Hydro Equipment and Chemical Company, located at the "B" Street Pier, San Diego, manufactures water treating equipment along with sales and service involving chemicals, laundry machinery and equipment.

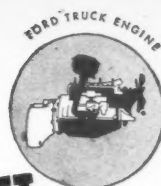
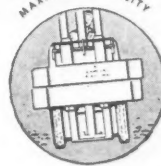
**EXPANDS FACILITIES**—Poulsen & Nardon, as of October first, is expanding into its newly purchased plant at 12th and McKinley Avenues, National City. It will continue the manufacture of aluminum cooking utensils, toy scooters and electric heaters. Ultimately the firm anticipates a payroll covering 250 workers.

**NORTON MANUFACTURING CO. EXPANDS**—When the Glenn-Roberts Company, manufacturers of welding machinery for 12 years in Oakland, decided to move to Indianapolis in order to compete on a Midwestern basis, Norton Manufacturing decided to take over Glenn-Roberts present plant at 3100 East Tenth Street. The Roberts concern will continue sales warehouse and service in Oakland.

**MORE GINGER ALE**—The Canada Dry Ginger Ale Co. is building a one-story bottling plant, 140x240 ft., of concrete block and structural steel aluminum roof, steel sash and sprinkler system, at an estimated cost of \$150,000, in Berkeley.

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**PLATE GRIPS** — Safe, positive grips in a variety of sizes for handling vertical plates or upending horizontal plates and assemblies.

**PIPE TONGS** — Heavy duty tongs for easy handling of pipe, billets, bars, timber. Locks in open position. Picks up from floor surface.

**PLATE HOOKS** — Handle one or more horizontal plates. Used in sets of 2 or 4. Two styles.

**RAIL TONGS** — Handles large or small rail. Two sizes with 3" or 4½" jaw.

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 Plate Grips • Plate Hooks • Crane Trolley Hoists • Crane Wheels • Crane  
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 Crane Hook Blocks



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**JOHNSON SPECIAL ALLOY COATED WIRE**—.003" to .080".

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**Los Angeles**

**JOHNSON STEEL & WIRE CO., INC.**  
 WORCESTER • MASSACHUSETTS

## THE WEST ON ITS WAY

**TO IMPROVE FACILITIES** — San Francisco's famed Fisherman's Wharf and allied fishing industry is scheduled for \$2,000,000 improvement and enlargement of facilities, Thomas Coakley, president of the Board of State Harbor Commissioners, has revealed.

**P. G. & E. PLANS**—Pacific Gas & Electric Co. plans expenditure of \$19,000,000 to enlarge the power generating capacity of its Station P steam plant in San Francisco. Under plans made in 1941 but delayed by wartime shortages, two 100,500-hp. turbine generators will be added to the plant's 62,997-hp. capacity. Completion is expected late in 1946. The additional generators will be installed in a new \$1,870,000 building to be erected adjacent to the existing station near Hunters Point. Power will be used to supplement hydro-electric output and augment standby capacity. The turbine generators will be hydrogen cooled. Steam will be provided by four outdoor boilers, each with a normal capacity of 450,000 pounds of steam an hour.

**FACTORY EXPANSION**—Leyhe Manufacturing Company, Charles F. Leyhe, owner, recently moved from Burbank, California, to 951 South Main Street, Fallbrook, and now produces refrigerator compressors; later plans production of outboard motors. Establishment has an investment in plant and equipment of over \$160,000, employs 15 skilled workmen, and plans a gradual expansion.

**FOR CONVAIR PARTS**—Narmco, Inc., formerly National Research and Manufacturing Company, is establishing a second branch operation (one has been operating for over a year at Corona del Mar) on Pacific Highway at Grape Street, San Diego, will fabricate plastic parts for aircraft, principally for Convair. The home office plant, at 541 Second Avenue, San Diego, will continue its experimental endeavors, currently directed to artificial legs and aircraft parts.

**MARINE & INDUSTRIAL PAINTS**—Manning-Mitchell, Inc., recently organized San Francisco firm manufacturing marine and industrial paints, has purchased the plant of Dutch Paint Co., a San Francisco subsidiary of United Industries. Manning-Mitchell, Inc., was organized by former Navy officers, including B. M. Wolfe, president; F. J. Dannenfelser, vice-president, and R. M. Mueller, secretary-treasurer. Principal products of Manning-Mitchell are shipping copper and racing copper, anti-fouling paints based on principles of formulation developed in wartime and tested at sea under war conditions.

**NEW FROZEN FOOD PLANT**—General Foods Co. has taken an option on 7 to 9½ acres on E. Fifth Street, Oxnard. Title will be transferred from Milton and Edwin Diedrich on Nov. 1, after the lima bean crop has been harvested. Company plans freezing foods under the Birds-Eye label.

**NEW PLANT AT SACRAMENTO**—The Pacific Can Company, Sacramento, Calif., plan to erect can manufacturing plant on Fruit Ridge road between 24th and Western Pacific tracks.

**COLUMBIA'S NEW MILL PROGRESSING**—Construction of Columbia Steel Company's new \$25,000,000 cold reduction steel sheet and tinplate mill at Pittsburg is proceeding on schedule. Preliminary grading has been completed and actual erection of buildings started in September. New mill will be capable of producing approximately 500,000 tons of steel sheets and tinplate. On adjacent New York Slough, construction of deepwater docks for ocean vessels and barges is underway.

**SERVICE CONTRACTS**—Texas Co., Los Angeles, has been awarded a \$5,000,000 lubricating oil contract by the Navy; . . . Menasco Mfg. Co., Los Angeles, has been given additional gas turbine and jet engine work amounting to \$2,402,700 by the Army Air Force, increasing the company's backlog to a reported \$8,400,000.

**FULLER PLANS EXPANSION**—W. P. Fuller & Co., 301 Mission Street, San Francisco, are completing plans for a paint factory to be built on East Grand Avenue in South San Francisco. Construction will be of three-story concrete and glass brick, 102 x 281 ft. in area, with composition roof.

**MINING ACTIVE**—Inyo County lead mines are operating near capacity. Darwin Mines, owned by Anaconda Copper, is producing more than 500,000 pounds of lead monthly. Southern Lead Co. has resumed production of its Lead King mine in the Ubehebe district. Gaston Gold Mine, Nevada City, has revealed better grade gold than anticipated and management plans construction of a mill capable of treating 125 to 150 tons of ore daily.

**HYMAN COMPANY ACQUIRES NEW OUTLET** — The Edward Hyman Co., 1830 S. Hill Street, Los Angeles, has acquired the National Linen Supply Co., 1620 Compton Ave., Los Angeles, for more than \$750,000. It will continue to operate the new business as a linen supply house. The Hyman concern manufactures uniform and linen supplies.

**TREESWEET EXPANDING**—Treesweet Products Co., Santa Ana, which has just completed its biggest year, with sales amounting to \$3,799,783, plans construction of entirely new plant facilities in Orange County, increasing gallonage some 1500 gallons an hour, and expansion of its Phoenix, Ariz. plant to include orange juice and blended orange juice as well as grapefruit juice now produced there.

**TEA GARDEN BUYS OREGON PLANTS**—Tea Garden Products Company, San Francisco, headed by T. N. St. Hill, pres., has acquired the plants of R. I. McLaughlin Co. at Gresham and Beaverton, Ore., to increase output of Tea Garden's berry and jelly preserves.

**CREAMERY EXPANSIONS**—The California concerns plan expansion of creamery facilities—McColl's Ice Cream Co., 1620 Oregon Street, Redding, plans a milk processing plant costing \$150,000 at intersection of Highways 99 and 44, Redding; while Gridley Farmers' Co-operative Creamery Co. has awarded the contract for its concrete creamery plant costing \$150,000 at Gridley.

**PITTSBURGH WATER HEATER PLANS EXPANSION**—Plans are progressing for a one-story concrete factory building, 100 x 100 ft. for the Pittsburgh Water Heater Co., 1605 Jefferson Street, Oakland.

**LOFT AND MANUFACTURING PLANT**—Charles Lefkowitz, 174 N. Canon Drive, Beverly Hills, has awarded the contract for his \$100,000 loft and manufacturing plant at 2512 S. Main Street, Los Angeles.

**PACIFIC PAINT EXPANDS**—Contract has been awarded for the Pacific Paint & Varnish Company's new \$120,000 building at 1604 Fourth Street, Berkeley. It will be a 3-story, reinforced concrete, resin and varnish factory building, 60 x 100 ft. in area.

**FLOUR AND FEED MILLS PLANNED**—Globe Mills, 907 E. 3rd Street, Los Angeles, (West Coast Division of Pillsbury Mills) plans construction of a large flour mill, a feed mill, and grain elevator. Mill will have daily capacity of approximately 6000 hundredweight, the feed mill 300 tons daily, and the elevator, 1,250,000 bushels capacity.

**NEW DOW CHEMICAL PLANT**—Dow Chemical Co. has awarded the contract for its \$150,000 iodine plant on Centinela Avenue, between Inglewood Blvd. and Sepulveda, Los Angeles. Construction includes steel absorption towers and storage tanks, piping, warehouse and office buildings.

**LUMBER MILL**—Work has begun on a new lumber mill at Dog Creek, Siskiyou County, 25 miles south of Dunsmuir, for Dunsmuir Lumber Company, 1007 Beverly Way, Dunsmuir.

**NEW CHEMICAL PLANT**—The Northwest Chemurgy Co-Operative of Wenatchee, Wash., plans construction of a manufacturing plant costing \$200,000 at Hatfield, northwest of Tule Lake, Calif.

**BLAKE'S FROZEN FOODS**—Preparation and distribution of frozen cooked foods is planned by a new company known as Blake's Frozen Foods, headed by Lawrence W. Blake, 2367 Telegraph Avenue, Berkeley, which is scheduled to build a plant at Davis in Yolo County. Casey Folden, industrial chemist, will be in charge of the manufacturing process.

**WEST COAST GETS FIRST DIAMOND CUTTING PLANT**—Lazare Kaplan & Sons, Inc., will open the West Coast's first diamond cutting plant in Pasadena by Nov. 1. Company will occupy a new factory at 3260 East Foothill Blvd., Pasadena, and business offices will be opened later in Los Angeles. Some 100 disabled veterans, those who have lost one or both legs, from the McCormack General Hospital in Pasadena and the Birmingham Hospital in Van Nuys, will be taught the operations of diamond cutting and polishing. Some 15 or 20 skilled operators will be brought from New York to train the veterans. The Pasadena plant will be equipped to handle \$50,000,000 in diamonds yearly. Rough diamonds from the DeBeers mines in South Africa will be cut at the Pasadena plant.

**BAY AREA EXPANSION APPROVED BY CPA**—United Air Lines has received approval to construct a shop building and three hangars at San Francisco Municipal Airport to cost \$1,700,000. It will provide central overhaul facilities for civilian Trans-Pacific service and United systems. At San Jose, General Electric Co. has been authorized to construct two industrial buildings on a site just south of the city, for the manufacture of electrical machinery and equipment for industrial and agricultural use. Project will start within 60-80 days. It will cost nearly \$1,700,000.

**CELOTEX CORP. BUYS EL REY**—Celotex Corp. has acquired 83.3 per cent of the outstanding shares of El Rey Products Co., which owns a roofing plant and felt mill in Los Angeles. It plans eventually to obtain full ownership of the El Rey firm. Acquisition of controlling interest in El Rey is part of an expansion program designed to increase Celotex roofing manufacturing facilities.

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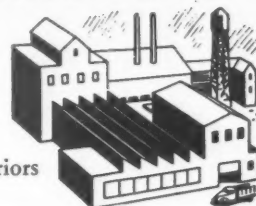
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## THE WEST ON ITS WAY

**LINCOLN PACKING CO. TO REBUILD**—Lincoln Packing Co. which suffered total plant loss in a fire last July, will rebuild plant in Roseville. Stockholders authorized directors to proceed on \$750,000 rebuilding program and a 15-acre site has been purchased at 6th and Antelope Road (Roseville). Plans are under way to rush plant for completion in time for 1947 pack.

**LUMBER COMPANY REBUILDING MILL**—Construction has started by the Paul Bunyan Lumber Co., Susanville, on a new sawmill on the site of its former one which was destroyed by fire the end of last May. Foundations were poured and the mill will be ready for operation the first of the year. When completed, the mill and allied logging operations will employ about 15 men. The new sawmill will be modern with all electric equipment. It is to be constructed from sections of about five different mills being shipped from the south.

**FOOD MACHINERY EXPANDS EASTWARD**—Food Machinery Corp. has acquired the Bolens Products Co., Port Washington, Wis., for the purpose of expanding its facilities in San Jose and adding to its products line by inclusion of garden tractors.

**WASHERS ROLL FROM FACTORY**—One of the first postwar manufacturing plans on the Pacific Coast to make a postwar product started its assembly line moving recently, delivering washing machines and dishwashers at the El Monte factory of the Hurley machine division of the Electric Household Utilities Corp. Construction on the \$350,000 plant, which covers 50,000 square feet on a 10-acre tract at 801 W. Valley Blvd., El Monte, was started last November. When in full operation it will employ more than 150 people with an estimated annual pay roll of \$500,000.

**BOWES PICKS RIVERSIDE**—Executives of Bowes Pacific Corp., West Coast manufacturer of Bowes Sealfast products, will operate a plant at 3356 Eighth St., Riverside.

**ASSOCIATE INDUSTRIES TO EXPAND**—Benjamin H. Swig, San Francisco, owner of the St. Francis, Fairmont and Bellevue hotels, has acquired a controlling interest in Associate Industries, Inc., of San Mateo. Associated Industries, a new industry, is engaged in the production of asbestos building materials such as shingles and sidings. Plans for substantial expansion are being undertaken.

**ROLL-RITE CORP. IN NEW PLANT**—The Roll-Rite Corp. is now occupying new quarters in Oakland which give them 25,000 sq. ft. of space. The new plant is said to be the largest materials handling equipment plant on the Pacific Coast. D. E. (Ed) La More is pres. of company; C. O. (Carl) Christensen is v.p. and production mgr., and W. H. (Bill) Denton is treas. and gen. mgr.

## COLORADO

**AMERICAN ZINC EXPANDS**—The Banner American mill of the General Ore Reduction Co. at Ouray has been acquired by the American Zinc, Lead & Smelting Co., 1600 Paul Brown Bldg., St. Louis 1, Mo. Mill improvements are being made.

**LEAD CARBONATE MINES EXPANDS**—Plans for a 100-ton mill are being completed by the new owners of the Lead Carbonate mine on Cement Creek, near Silverton. Mining and development operations are being pushed, and plans call for installation of a 100-ton selective flotation mill, installation of motor haulage and mucking machines. New owners are: Henry P. Ehrlinger, president; John E. Archibald, gen. mgr.; and Fred R. Archibald, sec.-treas.

**C. F. & I. PLANS \$5,000,000 EXXPANSION**—Plans for a five million dollar expansion program at the Pueblo plant of the C. F. & I. were outlined by Charles Allen Jr., chairman of the board of directors, recently in Pueblo. The money is to be spent during the next 18 months. Carl Meyers, veteran steel man, heads the concern which plans expansion of its facilities with new equipment and plans new products for both Western and other steel markets throughout the country.

**JOHNSTOWN SUGAR PLANT WILL REOPEN**—The Johnstown factory of Great Western Sugar Co. will resume operations in spring of 1947. It produces sugar from molasses produced as a by-product from beet-slicing factories. Plant was shut down during war because of heavy governmental demands for beet molasses. J. H. Zisch, chief technologist at Johnstown, has been appointed mgr. of the plant.



## IDAHO

**SEARS-ROEBUCK BUYS IN TWIN FALLS**—Sears-Roebuck & Co. has purchased a city block in Twin Falls, Idaho, at a cost of \$150,000, and will spend more than \$500,000 to prepare the Twin Falls structure for service in that area.

**CHEESE PLANT PLANNED**—Idaho Creameries, Inc., Boise, plans construction of a \$70,000 cheese plant. It will have a brick face, concrete slab floors, metal tile flooring, steel sash, cork tile, oil burner and steam heating system, and will be construction of structural steel. It will be one story high, 100x125 feet.

## MONTANA

**MANGANESE FIRM PLANNING TO OPERATE BUTTE RFC PLANT**—The Domestic Manganese & Development Co. has been appointed agent for the Reconstruction Finance Corp. to operate the RFC-owned flotation mill at Butte, Mont., as a custom mill in the concentration of lead-bearing ores. This action was taken in the direction of the Civilian Production Administration, in view of the serious lead shortage. The mill, which has a capacity of some 400 tons of ore a day, was used during the war to concentrate manganese ores.

**ANACONDA TO BUILD PHOSPHORIC ACID PLANT**—Construction of a \$1,069,598 phosphoric acid plant at Anaconda, Mont., for the Anaconda Copper Mining Co., has been approved by the CPA.

**LAUREL CUSTOM PLANING MILL IN OPERATION**—A custom planing mill has begun operations on Railroad street south of the Northern Pacific tracks, Laurel. Ralph Ford and L. A. Donohue, owners of the plant, expect to employ about 25 men when the mill is running at full capacity. Up to 50,000 board feet a day will be converted from rough lumber of large dimensions to finished products for building purposes.

**NEW OIL FIRM ORGANIZED**—The Santa Rita Co., headed by Louis B. (Tip) O'Neil of Missoula, veteran Montana oil operator, has filed articles of incorporation. O'Neil is a former prominent oil producer. The company is capitalized at \$50,000 and is authorized to engage in the general oil and gas business. Main offices are at Shelby. Directors are O'Neil and Louis P. Donovan and Patrick L. Donovan of Shelby.

## NEVADA

**AUSTIN'S GROUP EQUIPPING JUMBO**—George Austin and associates in Reno are installing a mill, pumping plant and pipe line at the Jumbo gold mine in the Awakening district. The mill is designed to treat 50 tons of ore daily. Water is to be piped 2300 feet.

**DRILLS INQUIRE INTO ORE VALUES**—Diamond drilling has been started in virgin sections of the Dayton Consolidated group of properties in Silver City with the purpose of locating extensions of known ore bodies. The 600 and 700-foot levels have been completely reconditioned and development work is progressing in the main workings. Homer L. Gibson is president and managing director of Dayton Consolidated Mines Co., and is anxious to resume capacity milling operations as soon as possible. Considerable reconditioning of underground workings must first be completed. Before the war the company milled 250 tons of gold-silver ore daily, employed 150 men and is said to have been Nevada's second largest gold producer.

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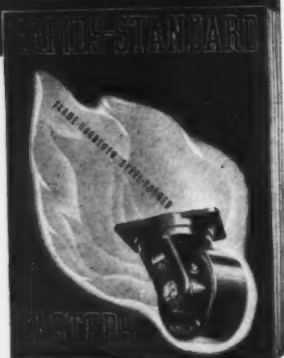
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## THE WEST ON ITS WAY

**MINES RESUME WORK**—Preliminary work has started at the Nivloc and Vanderbilt silver-gold mines near Silver Peak, preparatory to resumption of operations. Harry Hughes, mining engineer, is directing reopening of the Nivloc, a substantial producer in prewar years.

**COOPERATIVE UNIT ACQUIRES MINDEN BUTTER COMPANY**—Articles of incorporation have been filed for a new Carson Valley company to be known as the Minden Cooperative Creamery Co., which takes over the Minden Butter Manufacturing Co. The new business is a cooperative and farmers own the plant and business. Capitalization is set not to exceed \$75,000. The new officers will be Edward Godecke, president; Frank Settemeyer, first vice president; C. W. Godecke, second vice president; Clarence Henningsen secretary; Hubert Burns, treas.

## NEW MEXICO

**BROOMS**—Western Broom Manufacturing Company, Portales, has just completed a new warehouse for the storage of broom corn and the manufacture of brooms, with 72,000 square feet of floor space. Over 400 cars of broom corn are produced in Roosevelt County. J. V. Starkey and Earl C. Green are partners in this enterprise.

**CHEMICAL PLANT**—The Hobbs Chemical Supply Company will manufacture, at Hobbs, fungicides, insecticides, weed killers, soaps, cleaning fluids, and plastic products from synthetic chemicals.

**CATTLE CHUTE**—Busy Bee Welding Shop, Fort Sumner, is manufacturing a chute, with many unusual features, for the cattleman with branding and dehorning operations confronting him. The chute can be operated by one man.

**TILE MANUFACTURE**—Home Lumber Company, Portales, has installed a tile-making machine having a capacity of 5,000 tile a day. R. B. Allen is manager and C. Sanders, supervisor of tile-making dept.

**FURNITURE**—Roswell Mattress Co., Roswell, New Mexico, have begun the manufacture of upholstered furniture, including living room suites, occasional chairs, platform rockers; also lawn furniture.

**BOX FACTORY**—J. Fred Phillips has begun the operation of a box factory at Las Vegas.

**SCORIA**—The Vol-Scor Aggregate Company is now making building blocks in a factory at Clayton, New Mexico; and will soon start sawing lava blocks in a specially designed plant at Carrizozo.

**LUMBER**—Zuni Lumber Company have erected a planing mill and drying sheds for the manufacture of box lumber at Gallup. Box lumber so prepared is for shipment to Associated Box Co. of Pennsylvania.

**BENTONITE**—New Mexico's bentonite deposits are receiving the attention of ceramic and other manufacturers using this and other clays in their processes. Non-metallic minerals of New Mexico were widely used by armed services during war, and those uses prompt industrialists to further inquiry.

## OREGON

**NEW PORTLAND CONCERN**—West Coast Manufacturing Company, 4707 S.E. 17th, Portland, Ore., has acquired the rights to the manufacture of Gridd-Grill, cast aluminum griddle, from the Harmax Company of Multnomah. R. D. McGilvra is president of the West Coast company which plans to utilize streamlined die-casting facilities in its recently-constructed Portland plant in the production of the Grid-Grill. Extensive overhauling of equipment has been completed in readiness for the new product. In addition, the company will continue to manufacture their present line of lawn sprinklers, power tool accessories, aluminum towel racks, and other metal items. The Harmax Company retained manufacturing rights to their line of water softeners.

**TO PRODUCE OIL BURNERS**—H. J. Sandberg Co. has purchased the Rheem Manufacturing Co. plant in Portland. Included in the transaction are 12 acres of industrial property and a modern building with a floor area of 22,000 square feet. Sandberg plans to add 15,000 square feet, including a fireproof shop for painting and baking enamel finishes. Investment, including improvements, will exceed \$250,000. Plans call for production of oil burners, blowers and air conditioning equipment.

**CHANGES NAME**—Hirsch-Weis Manufacturing Co., Portland, plans to increase its capital stock to \$2.5 million and expand its manufacturing. A new corporation name, White Stag Manufacturing Co., also will be adopted. Under the change, White Stag Manufacturing will include

in the expanded corporation, the Hirsch-Weis Manufacturing Co. of New York, a separate partnership making White Stag clothing, and the Hirsch-Weis Canvas Products Co., Portland, also a separate partnership

**OIL FIRM PLANS NEW FACILITIES**—Texas Company plans construction of additional oil and gasoline storage facilities at the Texaco plant, 3640 N.W. St. Helens road, Portland. Plans call for two 80,000-barrel tanks and an unloading dock, expected to cost in the neighborhood of \$100,000.

**MILL AT CENTRALIA TO START WORK**—The Twin Cities Lumber and Manufacturing Company has started operations at its new Centralia mill. It is a resaw plant, electrically operated, with a daily capacity of 100,000 feet of finished lumber and represents an investment of \$80,000. R. G. Willrich is the owner. Between 20 and 25 men will be employed in the mill and yard. The company's raw material will come from small rough-cut mills throughout the area. Additions to the plant are already planned for the immediate future, including a new type, electrically operated dry kiln.

**\$250,000 PLANT UNDERWAY**—Work is 25 per cent completed on a \$250,000 ice and cold storage plant south of Albany for the Albany Ice & Cold Storage Co. Harry Seavey is general manager of the company.

**PLAN \$125,000 PLANT**—A building permit for the construction of a \$125,000 furniture manufacturing plant and warehouse at 4344 N.E. Hancock St., Portland, has been issued Ben Tarlow & Associates. The new building, which will largely house the rebuilding of used furniture, will be a 3½-story, 100x100-foot structure.

**RUBENSTEIN FURNITURE GETS OK**—The Rubenstein Furniture Co., Eugene, has CPA approval to construct a two-story \$50,000 bldg.

**BEGINS OPERATIONS**—Clear Fir Products plant, Springfield, Ore., has started production. H. M. Waterson is superintendent. A planer with capacity of 100,000 board feet a day is being installed.

**CANNERY TO BE BUILT**—Hudson-Duncan & Co., wholesale grocers, 325 S.E. Water, Portland, is contemplating construction of a large berry cannery sometime next winter.

**NEW PLANT DUE REDMOND AREA**—An animal by-products plant which will produce grease, tallow and proteins for mixed feeds is being constructed on the O'Neil market road five miles northeast of Redmond. Harry Bexhymer, Salem, and David Myers, Hillsboro, will construct and operate the plant. They are erecting a 50x120-foot main building of concrete blocks and have moved machinery and equipment to the location.

**CALIFORNIA FIRM BUYS TIMBER**—A timber stand of nearly 45,000,000 feet, on Cow creek, near Azalea, southern Douglas county, and privately owned, was bought this week by the Hayward Lumber company of Los Angeles. Price paid was reported to be \$145,000. The buyer plans erection of a sawmill with a daily capacity of 100,000 feet. Lumber operation will be managed by C. W. Courter.

**TO CUT TILLAMOOK BURN**—Included among CPA approvals was the Trask Lumber Company's request for permission to erect a \$130,000 sawmill on the Tillamook burn, planned as an operation which will cut 60,000 to 70,000 feet per eight-hour shift. Construction will account for \$70,000 of the total, equipment for \$60,000.

## UTAH

**UTAH OIL REFINERY EXPANDS**—Company plans a \$25,000 expansion program for its refinery at Jensen 13 miles east of Vernal in the eastern Utah oil fields. The Jensen plant, which has a daily capacity of 500 barrels of crude oil, has been expanding production gradually since the first of the year, when it was taken over by C. L. Collett, president; O. M. Collett, vice president, and C. R. Halstead. The expansion will include installation of a dewaxing process, which will enable the company to sell wax as a by-product of the three types of gasoline now produced. Gasoline is manufactured for major oil companies and sold primarily in the Uintah basin and western Colorado.

**WESTERN GYPSUM CO. FORMED**—Sale of the American Keene Cement & Plaster Co. plant at Sigurd in Sevier County, south-central Utah, to the newly-formed Western Gypsum Co., has been announced. Buyers of the plant and operations, at a cost of \$1.5 million, including \$800,000 for the plant itself, are Sidney H. Eliason, Pacific Coast district manager of the U. S. Gypsum Co., and W. S. Mole of Chicago. When ready for operation, the new company expects to produce gypsum lath and wallboard. Work at the plant is expected to be completed for a start of operations in the spring of 1947.



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## THE WEST ON ITS WAY

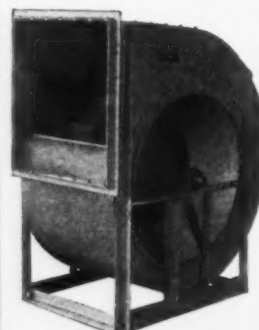
**UNION CHIEF TO BEGIN PRODUCTION**—The Union Chief Mining Company of Salt Lake City, Utah, will begin production at its open pit Merrimack mine location 43 miles northwest of McGill. Property consists of 240 acres of mineral ground. A road has been opened to the property. Phil Page is engineer in charge of operations. George Baglin, Salt Lake City, is head of the concern.

## WASHINGTON

**TO BUILD PLANT**—William B. Weber, Walla Walla, has asked the city commission for permission to construct a \$75,000 wood and metal-working plant there.

**REICHOOLD CHEMICALS PICKS SEATTLE** — Charles O'Conner, president of Reichold Chemicals, Inc., has announced the establishment of a sixth plant by his organization. The new plant will be located in Seattle where the company has taken over from the War Assets Administration the activated charcoal plant which was operated for the Army by Crown-Zellerbach during the war. Although the new plant will eventually turn out a fairly complete line of chemicals, the first output, scheduled to begin Jan. 1, 1947, will be phenolic resin adhesive for the plywood industry. Production is scheduled to begin with a daily output of a third of a million gallons per day from two units. Ted Hodgins, vice president, will be in charge of the new operation.

**\$4,000,000 PORT ANGELES PLANT PROGRAM BEGINS** — Construction to house an eighth digester and additional chip storage is now under way at Rayonier's Port Angeles, Wash., mill as part of the company's \$4,000,000 plant improvement program for this and other divisions. Also under construction at the local plant is a concrete block building to house the mill store, engineering department and shops. The addition to the digester building is of concrete to match the existing building. Concrete has been poured to the fourth floor. Rayonier also has ordered for the Port Angeles plant a high pressure boiler with a capacity of 12,000 pounds steam per hour.



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**INSULATION PLANT**—Pacific Rockwool Co. has started construction of a \$100,000 insulation plant near Dishman. Manufacturing is expected to start next spring. Capacity will be 20,000 tons of insulation annually. About 50 persons will be employed. The new plant will be owned jointly by a group of Northwest businessmen and Carney Co., of Mankato, Minn. Western customers of Carney are to be served by Pacific Rockwool. Murray Estes, Moscow, Idaho, attorney, is executive head of the newly organized company. W. B. Lee, executive vice president and general manager of Carney, and Carl Heim, Carney's chief consulting engineer, will supervise construction of the Dishman plant.

**FRUIT HANDLERS PLAN \$1,000,000 PROJECT**—Fruit handlers of Tieton valley are engaging in a large scale program of constructing cold-storage warehouses in the Tieton-Cowiche district. Six large warehouses and cold storage plants are being built in the area at a cost exceeding \$1,000,000. One of the largest is being constructed by the Cowiche Growers, Inc., a cooperative of Cowiche district growers. The cooperative is constructing a second large warehouse. At Tieton cold storage plants are being built by Richey & Gilbert, Frank Cubberly, Roy Forney and the Taskers. Garretson Bros. are building a new warehouse next to their present one.

**OTHER CPA APPROVALS**—A \$300,000 project to be constructed at Shelton for the Simpson Logging Co., CPA approved, will include a 110x180-ft. machine shop and loading platform, a 40x140-ft. car repair shop, a 32x120x130-ft. warehouse, and an eight-stall roundhouse. The logging company project will house equipment for the essential Shelton mill. . . . Providing complete mechanical service for fishing vessels, a \$200,000 drydock and marine machine shop for the Washington Alaska Engine Co., Blaine and Westlake, was approved. The project will consist of a 100x120-ft. two-level main building and three slips with cover work sheds. Also planned are various finger piers and boat slips.

**ABERDEEN DOCKS TO BE IMPROVED**—Contract for construction of a 100x100-ft. reinforced concrete warehouse at the Aberdeen port dock at a cost of \$47,911 has been awarded to the Lamb Const. Co., Aberdeen, port authorities announce. It is expected that the building will be completed about the first of the year. The commissioners also completed plans for reconstruction of the north side of pier No. 1 at a cost of \$100,000. The project has been approved by the civilian production board. The work will include replacing stringers and timbers along the pier, which has not been rebuilt in about 10 or 12 years.

**NUT PROCESS PLANT SOUGHT**—Permission to construct a \$175,000 walnut-filbert processing and packaging plant at Dundee is sought in an application filed with the Oregon district CPA construction review committee by Northwest Nut Growers. The application provides for a 160x170-ft. one-story concrete building to care for the output from six Oregon and Washington producer organizations.

**\$100,000 TACOMA MILL ADDITION RECEIVES OKEH**—CPA has approved construction of a \$100,000 addition to the pulp mill of the West Tacoma Newsprint Co., West Tacoma. It will consist of a reinforced wood, 54x95-ft. grinder building, a 100x300-ft. wood and corrugated iron wood preparation building, a reinforced concrete flume 9 ft. wide, 4 ft. 6 in. deep and 320 ft. long, a log haul, and a 350-ft. railway spur. The mill will employ approximately 70 persons when completed. The building is the former Cascade mill, idle for the past nine years.

**CPA SEATTLE APPROVALS**—CPA has approved a new plant to be built by the Seattle Port-Intelligencer in the Denny Regrade at an estimated cost of \$900,000. Also approved is a \$268,020 oil storage plant for the Texas Company, at 2555 - 13th Ave. S.W., Seattle. The two big projects were approved with the provision that construction is not to begin before December 1, 1946. The oil plant will consist of steel car and truck loading racks, a 60x170-ft. garage, a 44x70-ft. boiler house and foam building, a 44x56-ft. office and laboratory structure and a 30x80-ft. pump house, all of masonry construction. A 20x150-ft. barge dock is also planned.

**NEW TIMBER FIRM**—West Norman Timber Co., capitalized at \$300,000, has filed articles of incorporation at Olympia, Wash. Headquarters will be in Aberdeen. A. R. Wuest, president of West Coast Plywood Corp., is associated in the new firm with H. E. Tenzler and Ralph Dickman. Though primarily a logging company, under articles of incorporation the firm may deal in forest products of all kinds.

**PUGET SOUND SHIPYARDS GET CONTRACTS**—Contracts totaling \$4,000,000 for construction of 24 steel and 24 wooden fishing vessels for transfer to China under the UNRRA, have been let to three shipyards as follows: Bellingham Iron Works, 14 steel and five wooden ships; Tacoma Boatloading Co., five steel and four wooden vessels, and Pacific Boatbuilding Co., five steel and three wooden ships. The vessels will cost more than \$100,000 apiece when fully equipped.

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As a reader of WESTERN INDUSTRY you have probably followed with interest the series by Mr. W. G. Herron on the effect the November elections will have on the West.

Demand for additional copies of this series has been so great that we have reprinted the three articles in booklet form. You may have a copy upon request . . . no charge, of course.

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**WESTERN PLANTS ACQUIRED**—Adhesive Products Co. of Seattle, manufacturers of industrial adhesives and synthetic resins, and the Pacific Chemical Co. of Los Angeles, have been purchased by American Marietta Co., Chicago, which bought two Seattle paint plants a year ago.

**WAREHOUSE AND OFFICE BUILDING**—Contract has been awarded for construction of a \$250,000 warehouse and office building for the Kraft Foods Co., Seattle. The building will be located at 2127 N.W. Overton Street.

## WYOMING

**ORE SHIPPED BY MINING COMPANY**—The Silver King Mining company, Laramie, sent its first shipment of copper ore—25 tons—to the Garfield, Utah, smelter last week. The mine from which the ore was taken was discovered four years ago in Roger canyon, eight miles northeast of Laramie. Actual working of the mine did not get underway until about a month ago. Two other mines have been located in the area, and work will start on them later.

**PROCESSING PLANT IS BEING ERECTED**—A processing plant for the conversion of vermiculite ores for commercial use is being erected at Encampment by the U. S. Vermiculite company of Salt Lake City. For several years vermiculite ores have been mined near here which were shipped to processing plants elsewhere.

**RIVERTON TO LOSE REFINING PLANT**—Glenn Nieson, president of the Husky Refining Company, Cody, has announced that the company's refinery at Riverton will be moved to Lloydminster, Saskatchewan, Canada. Nieson said that with the end of the war the plant had been standing idle at Riverton. Production in oil fields at Vermillion, Alberta, and Lloydminster is considered sufficient by the company to warrant removal of the Riverton plant to that area.

**WOOL PROCESSING PLANT IS URGED**—Gov. Lester C. Hunt of Wyoming plans to ask the 1947 state legislature for a \$25,000 appropriation to be used in research to determine the possibilities for establishing a wool processing plant in Wyoming. The governor said he favored establishment of a wool processing plant somewhere in the state so that wool growers might avoid high freight costs.

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# WESTERN TRADE WINDS

NEWS ABOUT THOSE WHO DISTRIBUTE AND  
SELL INDUSTRIAL EQUIPMENT AND MATERIALS

Lloyd E. Holton, for many years with Tide Water Associated Oil Company, has resigned his post to become director of sales for Dixon Wagons, Inc., of Alhambra, Calif.

Roland H. Taylor has been appointed senior vice president of Industrial Equipment Company of Oakland, in charge of operations in California, Nevada and Arizona. He was general manager of the company's Northern California branch at Oakland. P. W. Cunningham succeeds to the post of Northern California manager. J. C. Frush is sales manager for Northern California and Nevada. E. L. Pine is resident representative in charge of the new branch in Reno.

L. M. Woodward, Pacific Coast manager, New Departure Co., will devote full time to the greatly expanded industrial engineering and sales activities for the ball bearing division, with offices in Los Angeles, San Francisco and Seattle.

Howard Oxsen has been promoted to manager of the Seattle branch house of Fairbanks, Morse & Co. He succeeds John F. Marquitz who will be assigned new duties elsewhere. He was Diesel engine department manager of the San Francisco branch from 1938 to 1945.

Irwin McNiece has been named assistant district superintendent of service and erection for Los Angeles district of the Allis-Chalmers Mfg. Co., Milwaukee. During the last 3½ years he has been working on company's marine programs in Seattle, Tacoma and Portland shipyards.

Beginning January 1, 1947, the St. Regis Paper Company will sell bleached and unbleached sulphate pulp produced at its mill at Tacoma exclusively through its sales subsidiary, the St. Regis Sales Corporation. William McNair, assistant pulp sales manager, will re-establish and manage the Chicago pulp sales office. Bulkley, Dunton Pulp Co., Inc. have acted as brokers.

Bechtel Brothers McCone Company, San Francisco and Los Angeles, have taken over all Somastic pipe coating operations in the eleven Western states. Somastic was previously handled by Industrial Engineering Company which has now merged with H. C. Price Co., exclusive agents for Somastic in 37 Eastern states.

J. R. Thompson has been named Denver, Colorado, district manager for the Industrial Products Sales division of the B. F. Goodrich Company. He has been with the textile division of the company. He succeeds John Guldge who has been acting manager in Denver, and who will now be assigned other duties.

John T. Burdick has been appointed California Division manager of the lighting sales department of Sylvania Electric Products Inc., 111 Sutter Street, San Francisco. His offices will be at 555 South Flower Street, Los Angeles.

The Dallman Supply Company and the Dalco Appliance Company, which serve appliance dealers and the plumbing and heating industry, have opened their new San Francisco warehouse and office building at Seventh and Townsend Streets. Some 60,000 sq. ft. of storage space are available. Vernon S. Dallman is president of the supply company.

Western Machinery Company, Los Angeles, has been named distributor for Union Wire Rope Corporation products. Company also sells Wemco metallurgical equipment and Chicago Pneumatic Tool Co. compressors and air tools. Hilton Blackburn is manager of the concern.

Randall D. Stone, former San Joaquin Valley district manager for Oil Well Supply Co. at Bakersfield has been placed in charge of new branch division office in San Francisco. H. L. Freeman, export representative of the company, will also make his headquarters in San Francisco.

F. E. Moore, president, Mathews Conveyor Company, Ellwood City, Penn., announces a new sales policy for its subsidiary, Mathews Conveyor Company West Coast, effective October 31.



P. W. Brown

This terminates the working agreement which Mathews has had with Mailler Searles, Inc., and all sales of Mathews conveyers in the Pacific states and Hawaiian Islands will be handled by the sales organization of Mathews Conveyor Company West Coast rather than through Mailler Searles.

The direct company-to-customer basis for sales has proved highly satisfactory in the Ellwood City, Pa., and Port Hope, Ontario, plants of the Mathews organization, utilizing sales representatives with long training in conveyor design and application in the sales engineering division of the company, and able to give complete field engineering service. The manufacturing division will remain at 300 Seventh St., San Francisco, until approximately January 1, when a new factory building now under construction in San Carlos, California, will be occupied.

Sales engineering offices will be maintained in Los Angeles, Portland and Seattle while the Bay area will be served from San Carlos. The sales organization will be headed by P. W. Brown of San Francisco, long experienced in the engineering and sale of Mathews conveyers, and especially familiar with the conveyor problems of West Coast manufacturers.

General Electric has appointed J. F. Gogins as assistant to W. F. Hynes, apparatus department district sales manager for the Northwest district, with headquarters in Portland. He has been manager of apparatus sales department at Spokane for the last four years. H. C. Glaze Jr., sales engineer at Spokane, will succeed to Gogins' position.

Other appointments include that of H. M. Gustafson as assistant manager of the Seattle office; C. R. Wallis, sales engineer at Seattle, as district manager, transportation division; and E. C. Curtis, formerly district switchgear specialist, as district manager, central station division, for the Northwestern district at Portland.

All Bearing Service, Inc., has opened a store service headquarters in Oakland. Walter W. Scott is in charge of the firm which handles a complete line of all types of bearings. Gordon R. Tracy is associated with him. Engineering consultation is provided the customers.

The Instrument Service Company has moved into its new building at 1218 S. Boyle, Los Angeles. The company carries stocks of thermometers and pyrometers and some new lines including gauges, electrical instruments and tachometers.

Ray E. Latham has been appointed sales manager of Bearing Sales, 1950 South Olive Street, Los Angeles. Company is factory distributor for several of the well-known bearing manufacturers and maintains a complete service for users of ball and roller bearings. Latham was Coast manager of distributor sales for the Fafnir Bearing Co.

West Coast division headquarters for Fuller Manufacturing Co., transmissions and auxiliaries for heavy-duty application will be located in San Francisco shortly. E. L. King, assistant sales manager of Fuller, has been named Pacific Coast head. Office location will be announced later.

Atwood Machinery Co. has opened its new store, shop and warehouse at 695 Santa Fe Avenue, Los Angeles 21, California. Company handles AC and DC motors, generators and power plants, etc., woodworking machinery, radial power saws, supplies and parts, and provides sales, service and repairs.

The Foxboro Company of Foxboro, Mass., has named Robert E. Rogers as branch manager of the Los Angeles office. Mark B. Bagley will be service engineer.

The Roll-Rite Corporation, manufacturer of materials handling equipment, has opened its new plant in Oakland. Some 25,000 sq. ft. is occupied by the concern. D. E. La More is president, C. O. Christensen is vice-pres. and production mgr. and W. H. Denton is treas. Company makes materials handling equipment.

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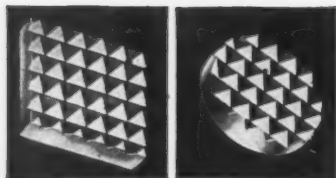
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# THE SHOWCASE

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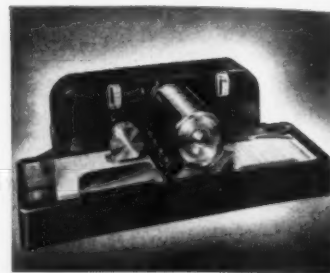
473

**New Method of Die Casting**—General Die Casting Corp., Oakland, Calif., features new mechanical method of die casting, utilizing a die casting machine newly developed by an associate of the firm. It casts all non-ferrous metals. Pressure on closing end of machine is 4,000,000 lbs. spread over a 30"x30" platen. Metal injected into die under pressure up to 150,000 lbs. General Die Casting Corp., Oakland, Calif.

474

**Model 450A Amplifier**—Wide-band amplifier ideal for general purpose or laboratory use. Provides unusual stability at 40 db. or 20 db. gain.

475



•The Red Feather Copy Chief has sealed-in-oil mechanism and synchronizes each paper-handling part with the others. All parts are rotary. Produces clean-cut, hairline register copies, and ink is distributed evenly. Red Feather Products, Ltd., Redwood City, California.

476



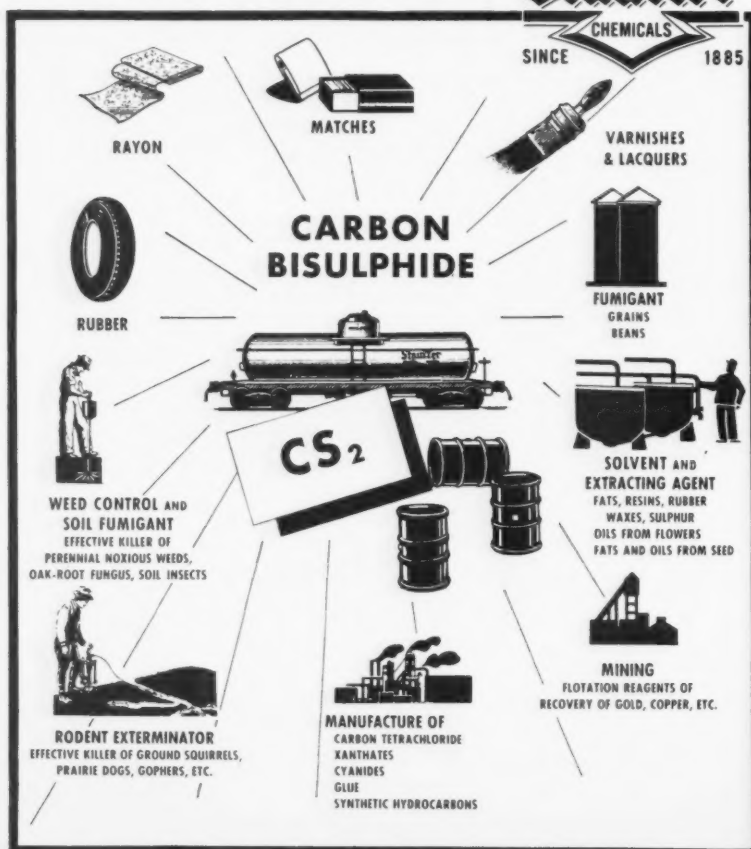
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477



•This Arnold Rol-R-Lift is a modern lifting bar with a roller in the heel. Recommended for use in relocating machinery in plants, for moving or wrecking buildings, where heavy objects must be lifted onto dollies. Three styles of interchangeable toe plates: Notched, straight-edged and straight-edged with rubber-coating. Steel roller gives extra leverage and safe gripping edge. Made by Arnold Motor Company, Chicago, Illinois.

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# YOURS FOR THE ASKING

2060

**How to Test Nuts** — Procedures for testing locking effectiveness of self-locking nuts and related fastening devices are given in a 16-page pamphlet prepared after exhaustive studies by Dr. J. A. Sauer, dept. engineering mechanics, Pennsylvania State College. *Elastic Stop Nut Corp. of America, Union, N. J.*

2061

**Heated Rubber For Planes** — Applications of electrically heated rubber as an abrasion resistant skin for propellers, air-scoops and other exposed plane parts are discussed in a four-page folder, 6-7317 NS. *Aeronautical Division, The B. F. Goodrich Company, Akron, Ohio.*

2062

**Photoelectric Control** — How Photoswitch Series 20 and 21 Photoelectric controls perform counting, conveyor, motor or valve control operations, as well as many others, is described in Bulletin No. 317-P. *Photoswitch Incorporated, Cambridge 42, Massachusetts.*

2063

**The "Supertoter"** — Six-page booklet now available describing light-weight materials handling equipment manufactured by Aircraft Mechanics. Included are pictures of beverage truck, refrigerator truck, drum truck-raack, baggage truck and giant refrigerator truck. Immediate delivery. *Aircraft Mechanics, Inc., Colorado Springs, Colo.*

2064

**A Quick-Opening Fastener** — New bulletin contains engineering and procurement data on the new Shakeproof Q-Two quick-operating fastener for removable and hinged panels. Gives installation instructions, parts data and many illustrations. Bulletin S-75. *Shakeproof, Inc., Chicago 39, Ill.*

2065

**How the Dominant Drive Speeds Production** — That's the title of a new 16-page illustrated booklet recently published by the Multiple V-Belt Drive Association. Advantages of the drive are covered in separate chapters. Executives and foremen responsible for efficient and economical plant operation will be interested. *Multiple V-Belt Drive Assn., Chicago 3, Ill.*

2066

**Stainless and Heat Resisting Steels** — Section 24 of the American Iron and Steel Institute's Steel Products Manual deals with stainless and heat-resisting steels. Contents include chapters on standard type numbers, limits and ranges for chemical composition, classification of products, plates, hot-rolled and cold-rolled sheets, strip

and bars, structural and bar shapes, round and flat wire, properties and thermal treatment. *American Iron & Steel Institute, New York 1, N.Y.*

2067

**Oakite Soluble Oil** — A new booklet just off the press deals with the use of Oakite Soluble Oil. The data and formulae it contains is based not only on current use in large and small plants but on a wide range of work during the entire war period. It includes material concerning mixing procedures for coolants, addition agents, precautions to be taken to avoid rancidity, and other helpful data. *Oakite Products, Inc., New York 6, N.Y.*

2068

**Rapids-Standard Publications** — Now available are three publications; one a new simplified step-by-step lubrication chart for standard gear motors on Rapids-Standard power belt conveyors explaining in detail how to lubricate and maintain operating efficiency of seven different motors; Chart D182; another describes the Rapid-Roller gravity conveyor, a recent addition to the materials handling equipment of the concern. Company has perfected a hinged section in the conveyor line which provides a passageway for personnel, trucks or equipment. Permanent set-up of conveyor is thus undisturbed. *The Rapids-Standard Company, Inc., Grand Rapids 2, Mich.*

2069

**Lift Truck Surveys** — Offered as an aid to manufacturers with materials handling problems are the illustrated Lift Truck Job studies published by Towmotor Corp. Studies report in detail methods used by many leading manufacturers to speed materials handling system with corresponding increases in efficiency and labor-saving economy. *Towmotor Corp., Cleveland, O.*

2070

**Palletier Fork Truck** — Crescent Electric Palletier Fork Truck, in 1000 and 200 lbs. capacities, are described in a new folder just produced. Copies available to readers of *Western Industry*. Companion folder describes the 3000 and 4000 lbs. capacity Palletier. *Crescent Truck Co., Lebanon, Pa.*

2071

**New G-E Arc-Welding Electrode Catalog** — This 100-page book, attractively presented in color with welding imps dancing through it, tells you how welding electrodes are made, tentative specifications of the AWS and ASTM, handy color guide for quick identification of electrodes, tells you how to select electrodes and contains ready-reference chart for their selection. Electrodes are completely described and

## NOTABLE NAMES IN WESTERN INDUSTRY

In the early years of the late depression, an awkward, ambitious youngster called Electronics was stumbling over its own feet, but nonetheless growing boisterously into a big money business destined to take its place among the giants of American industry.

Robert Newcomb was then engaged in sales and engineering with a Los Angeles electronic equipment jobber. A perfectionist, Newcomb noted a growing tendency of manufacturers to employ modern engineering methods mainly to lower prices, seldom to improve quality.

Convinced that a profitable business could be operated without sacrificing quality, even though it meant necessarily higher prices, he decided in 1938 to do something about it.

A newly painted sign went up over the door of a small factory building. It read: "Newcomb Audio Products Company." Production was slow at first; exacting standards delayed deliveries. Newcomb refused to fill an order until he could fill it perfectly. As western sound equipment users gradually became aware of the excellence of his products, demand developed and growth followed.

Encouraged by acceptance in Pacific Coast States, Newcomb Audio organized in 1944 for expansion through top-ranking representatives and radio parts jobbers in the east, south, mid-west.

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important operating and engineering data is included. *Victor Equipment Co., San Francisco, California.*

2072

**Manual of Design for Arc Welded Steel Structures**—While this book is not free, the manufacturer will refund the \$2 spent for it if the purchaser finds the book does not come up to expectations. The 300-page definitive work, first of its kind, is compiled for Airco by Le-Motte Grover, M., Am. Soc. C.E., widely recognized in field of structural welding. It covers fundamentals of design, materials, inspection, estimating and engineering control of welding and related operations. It is based largely on standards of American Welding Society, American Institute of Steel Construction, and reports of the Welding Research Council of Engineering Foundation. *Air Reduction Sales Company, Dept. MD., New York City 17, N.Y.*

2073

**Boeing Plane Described**—An attractive brochure on the Boeing Stratofreighter which has a large payload capacity and an unprecedented low direct operating cost of 3.9 cents per ton mile, is available. Those interested in air transportation should find it a welcome addition to their library. *Boeing Aircraft Co., Seattle, Wash.*

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Acme Steel Company	27	King, Irving G., & Company	94
Aladdin Heating Company	88	Maltby, Edward D., Co.	84
American Pipe & Steel Corp.	73	Marwood, Limited	71
Anaconda Copper Mining Co.	21	McCarthy Company, The	24
Anaconda Wire & Cable Co.	21	McDonald, B. F., Co.	75
Anglo California Nat'l Bank	62	Menasco Mfg. Co.	57
California Barrel Co.	3rd Cover	Moore Business Forms, Inc.	20
California Spring Co.	67	Multiphase Laboratories, Inc.	94
Christian, J. D., Engineers	93	Myercord Company, The, Pacific Coast Division	26
Chrysler Corporation	19	Nutt-Shell Company	64
Clark Tractor Division		Oakite Products, Inc.	72
Clark Equipment Co.	55	Osgood Company	65
Cleveland Cap Screw Co.	11	Pacific Telephone & Telegraph Co.	87
Cleveland Tramrail Div. Cleveland		Paraffine Companies, Inc., The	83
Crane & Engineering	15	Philadelphia Chain Block & Mfg. Co., Inc.	85
Cleveland Worm & Gear Co.	68	Pioneer Rubber Mills	60
Coldwell, Banker & Company	88	Plant Engineering Co.	94
Connors & Company	74	Protected Steel Prod., Inc.	12
Conveyor Company, The	61	Rapids-Standard Co.	86
Cooper, J. T., Steel Co.	90	Ready Power Company	86
De Young Brothers Machinery Co.	89	Redington, F. B., Company	74
Dodge Mfg. Corp.	19	Revere Copper & Brass, Inc.	14
Downs Crane & Hoist Co.	82	Ridge Tool Company	78 & 79
Drake Steel Company	80	Roebeling, John A., & Sons Co.	59
Duff-Norton Mfg. Co.	31	Ruger Equipment Company	30
Economy Steel Co.	52	Ryerson, J. T., & Son, Inc.	32
Electric Storage Battery Company	13	Scientific Lubricants Co.	74
Electrolift, Inc.	70	Service Caster & Truck Corp.	81
Elwell-Parker Electric Company	28	Sharpe Mfg. Co.	89
F. A. B. Mfg. Co.	73	Shell Oil Company, Inc.	51
Fafnir Bearing Company	70	Signode Steel Strapping Co.	16
Fairbanks Company	68	Smoot-Holman Company	56
Fishtronic Staple Company	91	Solar Aircraft Company	10
Fruhauf Trailer Company	53	Southern California Telephone Co.	87
Garratt-Callahan Co. of Calif.	90	Standard Oil Company	34
General Excavator Co.	65	Stauffer Chemical Co.	92
Gibson, William D., Company	66	Steel Conversion Corp.	88
Gilliam, C. T., & Assoc.	74	Stevens-Adamson Mfg. Co.	4th Cover
Goodall Rubber Company	84	Stevens-Hall Advertising	93
Grinnell Company, Inc.	25	Stuart Oxygen Company	75
Hammil & Jones Prod. Homes	63	Tide Water Associated Oil Co.	22
Harnischfeger Corp.	4	Tubbs Cordage Company	86
Haws Drinking Faucet Company	90	U. S. Electrical Motors, Inc.	17 & 18
Hilliard Corp., The	72	Victor Equipment Company	2nd Cover
Immersion Heating Equipment Co.	85	Western Asbestos Company	3
Independent Pneumatic Tool Co.	6	Western Gear Works	11
Johnson Gear & Mfg. Co., Ltd.	58	Western Pipe & Steel Co.	23
Johnson Mfg. Corp.	80	Wrigley, Jr., William, Company	69
Johnson Steel & Wire Co., Inc.	82		
Johnston, A. P., Co.	94		
Jorgensen, Earle M., Co.	7 & 8		

## Johnston Stainless Welding Rods

Apologies to . . .

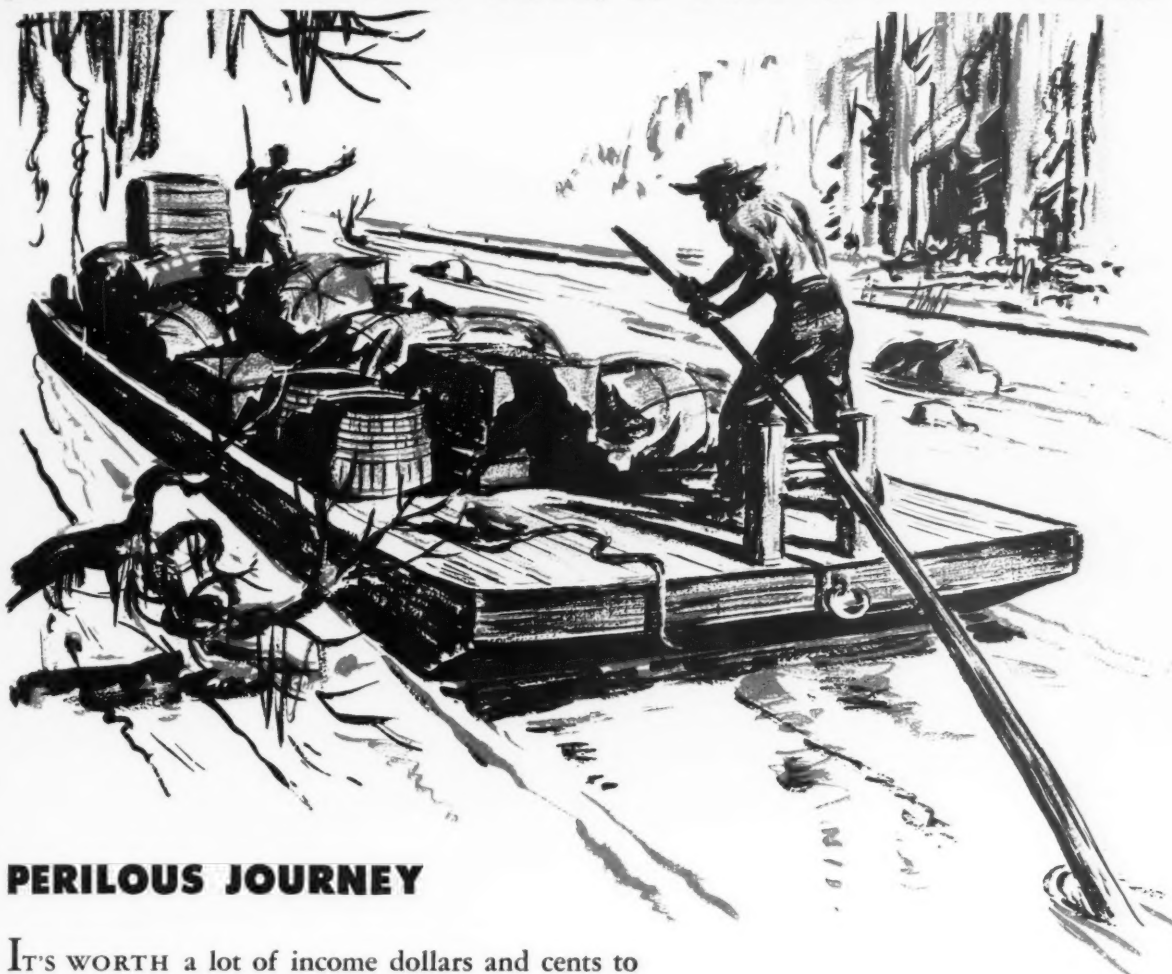
### MAHL STEEL & SUPPLY CO.

3081 E. SLAUSON AVE.,  
HUNTINGTON PARK, CALIFORNIA

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WHEREVER A PRODUCT GOES, IT GOES IN A CONTAINER



## PERILOUS JOURNEY

IT'S WORTH a lot of income dollars and cents to make sure your product arrives safely and economically at market. Your best guarantee of such arrival is a container that insures protection through strength, yet is light and easy to handle.

Cabco engineered containers have been filling this bill for over sixty years. They give you wood's great strength, plus wood's native lightness to save on tare weight. And each Cabco product reflects the extensive experience Cabco engineers have had in the construction of modern containers.

Whether you ship fresh asparagus or furnace grates, there's a Cabco container to solve your problem. Investigate today. Of course there's no obligation.

## CALIFORNIA BARREL COMPANY, LTD.

Since 1883

100 BUSH STREET, SAN FRANCISCO 4, CALIFORNIA

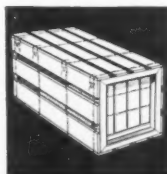
Offices: 2581 East Eighth Street, Los Angeles 23, California

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Plants: Arcata, San Francisco and Los Angeles, California

## TWO CABCO CONTAINERS

Designed to Fit... Engineered to Protect



Cabco's all-bound box is made of thin wood strongly stitched with steel wire to provide maximum protection at minimum weight. Quickly set up anywhere, the all-bound container can be readily opened or closed with bare hands. No hammer and nails are necessary.

And all Cabco products—barrels, boxes, tub baskets, unitized covers—are engineered from wood for greater strength and shipping economy. You can't go wrong with a Cabco custom-designed container.



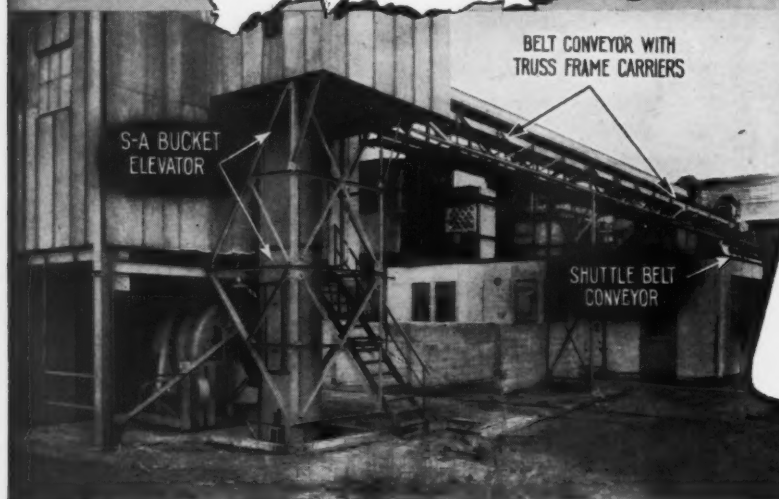
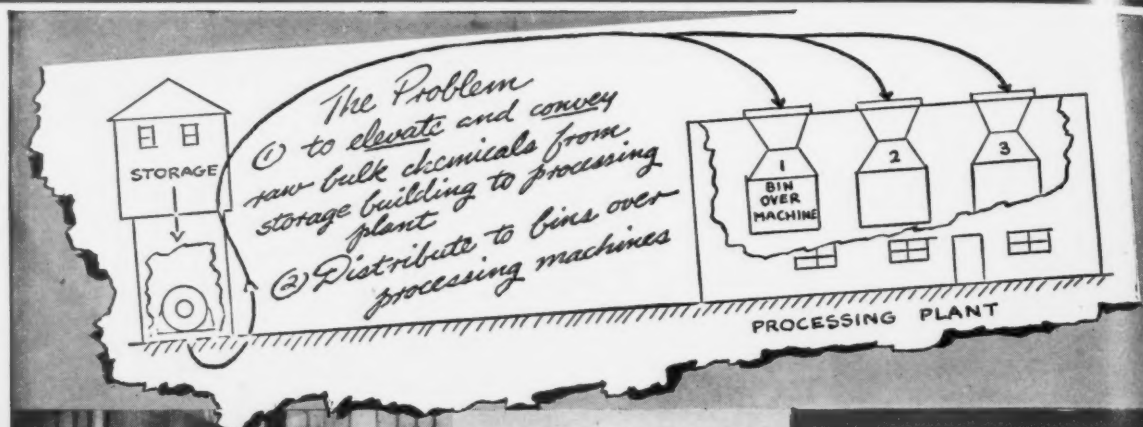
Exclusive Sales Agents:

## DUFF-MARION & CO.

Distributors of sawn shook and Cabco containers for shipping all fruits and vegetables

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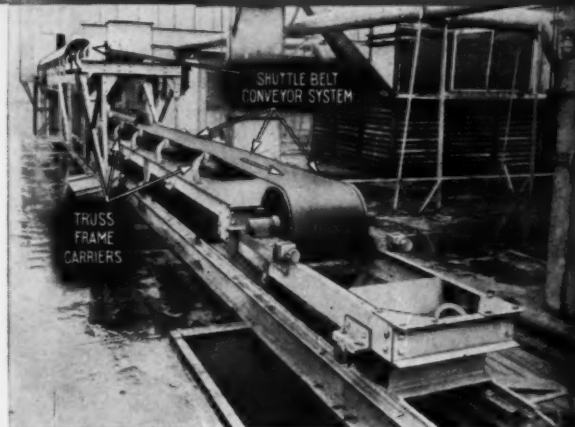
*Once Again*  
**S-A**  
*Has the Practical Answer*

Triple play combination, left to right—Bucket Elevator up to Stationary Belt Conveyor, over to Shuttle Belt Conveyor, and thru roof hatches to processing machines.

As usual, the ability to find the right solution, plus the right equipment, resulted in the right installation for the job.

An S-A Bucket Elevator lifts the material from mixer to stationary Belt Conveyor, which carries to a Shuttle Belt Conveyor for distribution to any one of several processing machines.

The use of the S-A Shuttle Belt Conveyor, shown, permits volume distribution to several machines without a tripper and by a conveyor unit of but half the length of the distribution range . . . How? . . . The entire Shuttle Belt Conveyor can be rolled to either side of the feed point, one end over desired discharge, and the carrying belt operated in that direction . . . another example of S-A simplicity and economy.



The comparatively short Shuttle Belt Conveyor has been rolled to one side of feed point, one end spotted over hatch at right, and carrying belt operated toward that end. Hatch covers removed to show receiving hoppers.

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 626 Duane Street, Salt Lake City, Utah

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